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BRACHIOPODA

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7. BRACHIOPODA

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I—TITLES

NOTE.—The system of numbering all papers in each part of the Zoological Record has now been dropped. In this part numbers are only given (in parenthesis) to papers in excess of one by a particular author.

The year of publication is omitted where it is the same as the volume year of the "Record," namely (1956).

Aderca, B. M. Découverte de l'horizon de Quaregnon au siège Gérard Cloes des Charbonnages de la Grande Bacnure, à Herstal (Bassin de Liège). Bull. Soc. géol. Belg. **79** : 151–157 (brachiopod mentioned).

Ager, D. V. The geographical distribution of brachiopods in the British Middle Lias. Quart. Journ. geol. Soc. **112** : 157–187 2 text-figs. 2 tables.

Ager, D. V. (1). A monograph of the British Liassic Rhynchonellidae. Part I. Palaeontogr. Soc. **110** : i–xxvi 1–50 4 pls. 27 text-figs.

Ager, D. V. (2). Geographical factors in the definition of fossil species. Systematics Assoc. Publ. No. 2 : 105–109 2 text-figs.

Ager, D. V. (3). Field meeting in the central Cotswolds. Proc. Geol. Assoc. Lond. **66** : 356–365 (brachiopods mentioned).

Agnew, A. F., Heyl, A. V., Behre, C. H. & Lyons, E. J. Stratigraphy of Middle Ordovician rocks in the zinc-lead district of Wisconsin, Illinois, and Iowa. Prof. Pap. U.S. geol. Surv. No. 274-K : 251–312 (brachiopods mentioned).

Agrawal, S. K. Contribution à l'étude stratigraphique et paléontologique du Jurassique du Kutch (Inde). Ann. Centre d'ét. doc. paléont. **19** : 1–188 12 pls.

Ahlfield, F. Bolivia in Jenks, W. F. Handbook of South American geology. Mem. geol. Soc. Amer. **65** : 167–186 (brachiopods mentioned).

[Aizenberg, D. E. & Brashnikova, N. E.] [A comparison of the Lower Carboniferous deposits of the Donetz basin with some other regions of the U.S.S.R.] C.R. Acad. Sci. U.R.S.S. **108** : 691–694 (brachiopods mentioned).

[Aizenberg, D. E. & Brashnikova, N. E.] (1) [On the faunistic character of the Donetz lowlands]. C.R. Acad. Sci. U.R.S.S. **108** : 907–909 (brachiopods mentioned).

Alexandrowicz, S. *Globotruncana* assemblages in the Turonian of the Cracow region. Acta Geol. polon. **6** : 41–63 (brachiopods listed) [in Polish, English summary sep. pag. p. 23].

Amano, M. Some Upper Cretaceous fossils from south-western Japan (Part 1). Kumamoto Journ. Sci. [B] **12** : 63–86 2 pls.

- Ancion, C.** *see* Leekwijck, W. van.
- Arkell, W. J.** Jurassic Geology of the World. Edinburgh & London: 1-806 (brachiopods mentioned).
- Aygen, T.** Étude géologique de la région de Balya. Publ. Inst. Ét. Rech. Min. Turquie Ser. D No. 11: 1-95 24 pls. [in Turkish, French résumé p. 65].
- [Baratov, R. B. & Kukhtikov, M. M.]** [On the age of the intrusion of Sina (south-western spur of the Gissar ridge)]. C.R. Acad. Sci. U.R.S.S. **107**: 299-301 (brachiopods mentioned).
- Behre, C. H.** *see* Agnew, A. F.
- Bertschy, R.** *see* Rutsch, R. F.
- Bodmer, W.** *see* Lieb, F.
- [Borissiak, M. A.]** [In Kiparissova, Markovski and Radchenko—Material on palaeontology. New families and genera.] Russia-Min. Geol. Okhran. Nedr. Moscow N.S. Paleont. **12**: 1-266 43 pls. 53 figs.
- Bourguignon, P.** Données nouvelles sur le Crétacé des Hautes Fagnes. Bull. Soc. géol. Belg. **79** 425-433 (brachiopods mentioned).
- Brashnikova, N. E.** *see* Aizenberg, D. E.
- Bredden, H.** Tektonische Gesteinsdeformation im Karbongürtel Westdeutschlands und Süd-Limburgs. Z. Deutsch. geol. Ges. **107**: 231-260 pls. 11-13 (tectonic deformation of brachiopods discussed).
- Bridge, J.** Stratigraphy of the Mascot-Jefferson City zinc district, Tennessee. Spec. Pap. geol. Surv. U.S.A. **277**: 1-76 (brachiopods mentioned and listed).
- Burck, H. D. M.** and others. Geological history of the Netherlands. Gravenhage 147 pp. 16 pls. (brachiopods mentioned).
- Burnside, R. J.** *see* Myers, D. A.
- Burri, F.** Die Rhynchonelliden der Unteren Kreide (Valanginien-Barrémien) im westschweizerischen Juragebirge. Eclog. geol. Helvet. **49** 599-701 15 pls. 38 text-figs.
- Callomon, J. H.** The ammonite succession in the lower Oxford Clay and Kellaways Beds at Kidlington, Oxfordshire, and the zones of the Callovian Stage. Phil. Trans. Roy. Soc. [B] **239** 1955: 215-264 3 pls. (brachiopods mentioned).
- Calver, M. A.** *see* Manson, W.
- Campbell, J. D.** The Oretian stage of the New Zealand Triassic System. Trans. roy. Soc. N.Z. **82** 1955: 1033-1047 1 pl. 4 text-figs. (brachiopods listed).
- Campbell, J. D. (1).** The Otapirian stage of the Triassic system in New Zealand. Part II. Trans. roy. Soc. N.Z. **84**: 45-50 1 fig. (brachiopods listed).
- Campbell, J. D. & McKellar, I. C.** The Otapirian Stage of the Triassic System of New Zealand. Part I. Trans. roy. Soc. N.Z. **83**: 695-704 1 text-fig. (brachiopods listed).
- Campbell, K. S. W.** Some Carboniferous brachiopods from New South Wales. J. Paleont. **30**: 463-480 pl. 48-50 5 text-figs.
- Cândido de Medeiros, A.** Estudo geológico-mineiro da região de Rates. Estud. Notas e Trab. Serv. Fomento Mineiro, Oporto **10**: 223-235 (brachiopods mentioned).
- Casey, R.** Notes on the base of the Gault in Wiltshire. Proc. Geol. Assoc. Lond. **66**: 231-242 (brachiopod mentioned).
- Caswell, P. V.** Geology of the Kilifi-Mazeras area. Rep. geol. Surv. Kenya **34**: 1-54 9 figs. 1 map (brachiopods mentioned).
- Chappars, M. S.** Catalog of the type specimens of fossils in the University of Cincinnati Museum. (Reprinted from the Ohio J. Sci. **36** 1936) [1956]: 45 pp. (brachiopods listed).
- Condon, M. A., Johnstone, D., Prichard, C. E. & Johnstone, M. H.** The Giralia and Marrilla anticlines Northwest Division Western Australia. Bull. Bureau Min. Resources No. 25: 1-86 (brachiopods listed).
- Cooper, G. A.** Chazy and related brachiopods. Smithson. misc. Coll. **127**: i-xvi 1-1245 269 pls.
- Cooper, G. A. (1).** A new Upper Canadian fauna from a deep well in Tennessee. J. Paleont. **30**: 29-34 pl. 5.

Cooper, G. A. (2). New Pennsylvanian brachiopods. *J. Paleont.* **30**: 521-530 pl. 61 1 text-fig.

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Elliott, G. F. On Tertiary trans-arctic brachiopod migration. *Ann. Mag. nat. Hist.* [12] **9**: 280-286 1 fig.

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II—SUBJECT INDEX

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FOSSIL

Palaeozoic. — Alaska, **Dutro**; General, **Jones**; Germany, **Solle**; (Ur.) U.S.A., **Stehli**; General, **Stehli** (4); (Lr.?) Ecuador, **Tschopp**; General, **Williams**; (Ur.) General, **Yakovlev**.

Cambrian. — (Mid.) Tennessee, **Bridge**; Arizona, **Gilluly**; (Mid.) Wyoming, **Hose**; Sweden, **Kulling**; Colorado, **Larsen & Cross**; New York, **Lochman**; Quebec, **Melihercsik**; U.S.S.R. (Kazakhstan), **Nikitin**; Nevada, **Nolan et al.**; (Lr.) Warwickshire, **Shotton et al.**; Sahara, **Sougy**.

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Silurian. — Bolivia, **Ahlfield**; (Llandov. and Wenlock) Gloucestershire, **Curtis**; Gloucestershire and Somerset, **Curtis et al.**; Yorkshire, **Dunham et al.**; Paraguay and Argentina, **Harrington**; (Ur.) Germany, **Jaeger**; Japan, **Kaneko et al.** (Ludlow) England, **Lawson et al.**; (Ur.), **McKerrow et al.** (2); Nevada, **Nolan et al.**; Brazil, **Oliveira**; Greece, **Renz**; (Lr.) Estonia, **Rosenstein**; (Ludlow) Warwickshire, **Shotton et al.**; (Ur.) Victoria, **Talent** (1); Poland, **Tomczyk**; (Ur.) Utah and Nevada, **Waite**; (Ur.) China, **Tsin**.

Devonian. — Bolivia, **Ahlfield**; (L^r.) Portugal, **Cândido de Medeiros**; General, **Cooper** (3); (L^r.) Morocco, **Drot**; Manchuria, **Endo**; Turkey, **Erentöz**; (L^r.) Germany, **Fenchel**; (U^r.) Arizona, **Gilluly**; (Mid.) Alberta, **Greiner**; Paraguay, Uruguay and Argentina, **Harrington**; U.S.A., **Hass**; California and Nevada, **Hewett**; Japan, **Kaneko et al.**; Somerset, **Kellaway & Welch**; (L^r.) Germany, **Kutscher**; U.S.S.R., **Larionova**; (U^r.) Belgium, **Leckwijck & Ancion**; Brazil, **Maack**; U.S.S.R., **Menyailenko**; (Mid.) Germany, **Metje**; Nevada, **Nolan et al.**; Brazil, **Oliveira**; New York, **Oliver**; Venezuela, **Pierce**; (U^r.) Germany, **Rabien**; Greece, **Renz**; Montana and Wyoming, **Richards**; (U^r.) Belgium, **Rutten**; (U^r.) Belgium, **Sartenaer**; (Mid.) Germany, **Struve**; (Mid.) Victoria, **Talent**; Canada, **Warren & Stelck**; (Mid.) Germany, **Wolfart**; Spain, **Kanis**.

Carboniferous. — (U^r.) Belgium, **Aderca**; (L^r.) U.S.S.R., **Aizenberg & Brashnikova**, **Aizenburg & Brashnikova** (1); Turkey, **Aygen**, (L^r.) U.S.S.R., **Baratov & Kukhtikov**; Germany, **Breddin**; (U^r.) Netherlands, **Burck et al.**; (L^r.) New South Wales, **Campbell**, K. S. W.; (U^r.) U.S.A., **Cooper** (2); (L^r.) Scotland, **Craig**, **Craig** (1); (L^r.) Scotland, **Craig & Nairn**, Somerset, **Curtis et al.**; Spain, **Delépine & Llado**; Yorkshire, **Dunham et al.**; Lancashire **Earp**; (L^r.) Arkansas, **Easton**; N. England, **Edwards**; Manchuria, **Endo**; (L^r.) U.S.S.R., **Epifanov**; Turkey, **Erentöz**; (Namur.) Ireland, **Fowler**, (L^r.) Saskatchewan, **Fuller**; (L^r.) Shropshire, **George**; (L^r.) S. Wales, **George** (1); Arizona, **Gilluly**; Argentina, **Harrington**; (L^r.) U.S.A., **Hass**; (L^r.) Japan, **Hayasaka & Minato**; California and Nevada, **Hewett**; Japan, **Kaneko et al.**; (L^r.) Somerset and Gloucestershire, **Kellaway & Welch**; Colorado, **Larsen & Cross**; (L^r.) Belgium, **Leckwijck & Ancion**; (L^r.) Lancashire, **Magraw & Ramsbottom**; (U^r.) Scotland, **Manson**; China, **Matsuzawa**; (U^r.) Brazil, **Mendes**; Czechoslovakia, **Mišik**; (U^r.) Yorkshire, **Moseley**; (U^r.) Texas, **Myers et al.**; (Mid.) Montana, **Mundt**; (U^r.) Ireland, **Nevill**; Nevada, **Nolan et al.**; Brazil, **Oliveira**; (L^r.) England,

Parkinson; (L^r.) England and Wales, **Prentice**; (L^r.) U.S.S.R., **Raznitsin**; Greece, **Renz**; (Namur.) N. Ireland, **Robbie**; (L^r.) Japan, **Sato**; (L^r.) U.S.S.R., **Simorin**; Ecuador, **Tschopp**; (L^r.) N. England, **Turner**; (U^r.) Lancashire, **Williamson**; (U^r.) Gt. Britain, **Wills**; Poland, **Zakowa**; Spain, **Kanis**.

Permian. — Bolivia, **Ahlfield**; Turkey, **Aygen**; (U^r.) Netherlands, **Burck et al.**; Manchuria, **Endo**; Turkey, **Erentöz**; N. Ireland, **Fowler** (1); Arizona, **Gilluly**; Japan, **Hayasaka & Minato**; Japan, **Kaneko et al.**; (Perm.?) Colorado, **Larsen & Cross**; U.S.S.R., **Licharew**; (Permo-Carb.) Australia, **Maxwell**; Texas, **Myers et al.**; (Perm.?) Nevada, **Nolan et al.**; Brazil, **Oliveira**; Greece, **Renz**; Texas, **Stehli** (1); Queensland, **Webb**; New Zealand, **Wood et al.**

Mesozoic. — General, **Jones**; General, **Williams**; General, **Elliott**; Switzerland, **Dubois & Portmann**.

Triassic. — Turkey, **Aygen**; New Zealand, **Campbell**, J. D., **Campbell**, J. D. (1), **Campbell & McKellar**; Poland, **Gruszczczyk**; California and Nevada, **Hewett**; Japan, **Kaneko et al.**; Hungary, **Panto**; U.S.A., **Stehli**; (U^r.) Peru, **Stehli** (2); New Caledonia, **Waterhouse**; Borneo, **Wilford**; New Zealand, **Wood et al.**

Jurassic. — (L^r.) Gt. Britain, Greenland, France, Germany, Sicily, **Ager**, **Ager** (1); (L^r.) Gt. Britain, France, **Ager** (2); (L^r and Mid.) Gloucestershire, **Ager** (3); (U^r.) India, **Agrawal**; General, **Arkell**; (U^r.) Oxfordshire, **Callomon**; Kenya, **Caswell**; Dorset, **Davies**, G. M.; (L^r.) Somerset, **Donovan**; (Mid.) France, **Drot** (1); (Mid. and U^r.) Algeria, **Ehrmann**; (U^r.) Russia, **Gerasimov**; England, **Green & Melville**; (U^r.) Oxfordshire, **Grensted**; (L^r.) Germany, **Hoffmann**; (L^r.) Scotland, **Howarth**; (U^r.) Wyoming, **Imlay**; Japan, **Kaneko et al.**; (L^r.) Madagascar, **Koenig & Tortochaux**; Poland, **Ksiazkiewicz**; (Mid.) Switzerland, **Lieb**; (Mid.) England, **McKerrow et al.**; (U^r.) Oxfordshire, **McKerrow**; (L^r.) Scotland, **MacLennan**; Oxfordshire, **Melville**; Greece, **Renz**; Mexico, **Rogers et al.**; (Mid.) Poland, **Rozycki**; (U^r.) France, **Schirardin**; (U^r.) Dor-

set, **Smart**; (L^r.) Switzerland, **Trumpy**; Borneo, **Wilford**; New Zealand, **Wood et al.**; Poland, **Znosko**.

Cretaceous. — (U^r.) Poland, **Alexandrowicz**; (U^r.) Japan, **Amano**; (U^r.) Belgium, **Bourguignon**; (U^r.) Netherlands, **Burck et al.**; (L^r.) Switzerland, **Burri**; (U^r.) Wiltshire, **Casey**; (U^r.) W. Australia, **Condon et al.**; Turkey, **Erentöz**; Arizona, **Gilluly**; Poland, **Ksiazkiewicz**; Japan, **Matsumoto et al.**; (U^r.) Crimea, **Moisseev**; (L^r.) California, **Murphy**; (L^r.) England, **Owen**; (U^r.) England, **Owen (1)**; (U^r.) Poland, **Pozaryska**; (L^r.) Greece, **Renz**; (L^r.) Switzerland, **Rutsch & Bertschy**; (U^r.) France, **Sénese**; Dorset, **Smart**; Lincolnshire, **Taylor**; (U^r.) Turkey, **Ternek**; (L^r.) Switzerland, **Trumpy**; Borneo, **Wilford**.

Cainozoic. — General, **Jones**; General, **Williams**; Japan, **Hayasaka & Uozumi**; General, **Elliott (1)**.

Palaeogene. — (Olig.) Argentina, **Harrington**; (?Olig.) Argentina, **Jaanusson**; (Eoc.) England, **McKerrow et al. (2)**; New Zealand, **Wellman**; (Eoc.) Arkansas, **Wilbert**.

Neogene.—Arctic, N. Atlantic and N. Pacific, **Elliott**; (Mioc.) Austria, **Sieber**.

Pleistocene. — Arctic, N. Atlantic, N. Pacific, **Elliott**; Japan, **Hayasaka & Uozumi**.

RECENT

Arctic, N. Atlantic, N. Pacific, **Elliott**; General, **Elliott (1)**; General, **Williams**; Japan, **Hayasaka & Hatai**.

III—SYSTEMATIC INDEX

NOTE.—The classification used here is according to H.M. Muir-Wood in "A history of the classification of the phylum Brachiopoda" British Museum (Natural History) London 1955, with minor later amendments. In view of the very varied state of revision of the different groups and to avoid certain inconsistencies, no subdivision is attempted here below the level of superfamilies.

Generic and family names are arranged in alphabetical order within each superfamily

Reference to the "Titles" is by the name(s) of the Author(s).

CLASS INARTICULATA

†DICTYONINACEA

Dictyoninacea superfam. nov. p. 187 including Fam. *Micromitridae* (here amended to include *Micromitra*, *Dictyonina* and *Dictyonites*), excluded from Order *Atremata* **Cooper**.

Dictyonites gen. nov. p. 187, type species *perforata* **sp. nov.** p. 188 figd. Mid. Ordovician, U.S.A., **Cooper**.

Order ATREMATA

†OBOLACEA

Acanthamboniinae subfam. nov. p. 211, for *Acanthambonia* only, Mid. Ordovician, U.S.A., **Cooper**.

Acanthambonia gen. nov. p. 211 type species *A. minutissima* **sp. nov.** p. 212, *virginiensis* p. 213 both figd. Mid. Ordovician, U.S.A., **Cooper**.

Ectenoglossa nympha p. 218, *nymphaeidea* **sp. nov.** p. 218 figd., *E. sp. 1* p. 220 figd., *E. ? lyelli* p. 217 figd., *rubra* **sp. nov.** p. 219 figd., *sculpta* **sp. nov.** p. 220 figd. Mid. Ordovician, U.S.A. and Canada, **Cooper**.

Glossella gen. nov. p. 228, type species *G. papillosa* **sp. nov.** p. 229, *lumbona* p. 228, *G. sp. 1* p. 229, all figd. Mid. Ordovician, U.S.A., **Cooper**.

Glossellinae subfam. nov. p. 213 for *Leptobolus*, *Pseudolingula* *Ectenoglossa*, *Palaeoglossa*, *Plectoglossa* *Pachyglossa*, *Glyptoglossa* and *Glossella* Mid. Ordovician, U.S.A., **Cooper**.

Glyptoglossa gen. nov. p. 226, type species *G. cavelliosa* **sp. nov.** p. 227, *G. sp. 1* p. 227 both figd. Mid. Ordovician, U.S.A., **Cooper**.

Leptobolus p. 213, *walcotti*, *L. sp. 1*, p. 214 both figd.; *L. sp. 2* p. 214, Mid. Ordovician, U.S.A., **Cooper**.

Lingulella alabamensis p. 195, *decorticata*, *endopunctata* p. 198, *galba*, ? *glypta* p. 200, *lirata* p. 201, *rideauensis*, *rugosilinea* p. 203, *spicata* p. 204, *subparallela*, *tenuitesta* p. 205, *virginiensis* p. 206, all spp. **nov.** all

figd.; *brainerdi* p. 196, figd., ? *clochenensis* p. 197, *columba* p. 198, *fostermontensis* p. 199 figd., *huronensis*, ? *huronensis minganensis*, *kingstonensis* p. 201, *morsei*, *narrawayi* p. 202; *L.* sp. 1, sp. 2, p. 206 figd., ? sp. 3, ? sp. 4, ? sp. 5, p. 207 figd., sp. 6, sp. 7, ? sp. 8, p. 208 figd. Mid. Ordovician, U.S.A. and Canada, Cooper; *L. granvillensis* p. 1370 figd., Lochman; *L.* sp. ? p. 43 figd., Powell; *L.* sp. p. 13, Rusconi; *L.* cf. *mosia* p. 11 figd. Nikitin.

Obolus sp. p. 10 figd., Nikitin; *O. dolatus* p. 42 figd., Powell; *O.* sp. 1, *O.* sp. 2 p. 192 both figd. Cooper; *Obolus* ? *biconvexa* sp. nov. p. 189 figd.; *cyane* p. 190; *grandis*, *nitens* spp. nov. p. 190 figd., *virginienensis* sp. nov. p. 191 figd.; *O.* ? sp. 3, sp. 4, sp. 5 p. 193 all figd. Mid. Ordovician, U.S.A., Cooper.

Pachyglossa gen. nov. p. 223, type species *P. dorsiconvexa* sp. nov. p. 225, *biconvexa* sp. nov. p. 224, *P.* ? *elderi*, *P. pachydermata* sp. nov. p. 225, all figd. Mid. Ordovician, U.S.A., Cooper.

Palaeoglossa mysticensis sp. nov. p. 221, *P.* sp. 1 p. 222 both figd.; *P.* ? *belli* p. 221 figd., ? *pulicis* p. 221 Mid. Ordovician, U.S.A. and Canada, Cooper.

Plectoglossa gen. nov. type species *P. oklahomensis* sp. nov. p. 222, *P.* sp. 1 p. 223 both figd. Mid. Ordovician, U.S.A., Cooper.

Pseudobolus gen. nov. type species *Palaeoglossa gibbosa* Willard p. 194 figd., *P.* sp. 1 p. 195 Mid. Ordovician, U.S.A., Cooper.

Pseudolingula acquilina, *P.* ? *eva* p. 215, *P.* ? *imperfecta* sp. nov. p. 215 figd., *P.* ? *tuttrellensis* sp. nov. p. 216 figd., *P. pyxidata* p. 217, *P.* ? *sculptata* sp. nov. figd., *P.* sp. 1 p. 217, Mid. Ordovician, U.S.A., Cooper.

Spinilingula gen. nov. type species *S. intramellata* sp. nov. p. 210 figd., Mid. Ordovician, U.S.A., Cooper.

Westonia clathrata, *superba* sp. nov. p. 209, *W.* sp. 1 p. 210, all figd. Mid. Ordovician, U.S.A., Cooper.

LINGULACEA

†*Lingula* p. 204 McKerrow et al. (1); *L.* spp. p. 507 McKerrow et al. (2); *L. akabiraensis* sp. nov. p. 219 figd. Hayasaka & Hatai; *L. loulanensis* p. 628 figd., Tsin; *L.* sp. figd., Easton; *L. parallela* p. 87, *squamiformis* p. 88, *L.* sp. p. 89, all figd., Simorin; *L.* cf. *spatulata* figd., Warren & Stelck.

†TRIMERELLACEA

Craniops attenuata, *tenuis* sp. nov. figd., *minor*, all p. 240, *trentonensis* p. 241 figd. Mid. Ordovician, U.S.A., Cooper.

Elliptoglossa gen. nov. p. 241, type species *Leptobolus* ? *ovalis* Bassler p. 242 figd., *rotundata*, *sylvanica* spp. nov. p. 244 figd. Mid. Ordovician, U.S.A., Cooper.

Lingulasma p. 232, *compactum* p. 232, *matutinum*, *oklahomense* p. 233, *occidentale* p. 234, all spp. nov., all figd., *L.* sp. 1, sp. 2, sp. 3, p. 235, Mid. Ordovician, U.S.A., Cooper.

Lingulops cliftonensis p. 235, *norwoodi* p. 236 both figd. Mid. Ordovician, U.S.A., Cooper.

Obolellina p. 230, *canadensis*, *dixonensis* sp. nov. p. 230 both figd., *erecta* p. 231, *magnifica* p. 231 figd., *parva* p. 232 Mid. Ordovician, U.S.A. and Canada, Cooper.

Paterula p. 236, *amii* p. 238, *perfecta* sp. nov. p. 238 figd., *polita*, *subcircularis* spp. nov. p. 239 both figd. Mid. Ordovician, U.S.A., Cooper.

Order NEOTREMATA

†SIPHONOTRETACEA

Botsfordia caelata p. 1370 figd., Lochman.

Schizambon p. 264, *cuneatum* p. 265, *duplicimuratum*, *hirsutum* sp. nov. p. 266, *irregulare*, *lineatum*, *macrothyris* spp. nov. p. 267, *per-spinosum* sp. nov. p. 268, *subradiatum* sp. nov. p. 269, *S.* sp. 1, sp. 2 p. 270, all figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Siphonotreta americana sp. nov. p. 263 figd., Mid. Ordovician, U.S.A., Cooper; *S. textilis* sp. nov. p. 12 figd. Lr. Ordovician, Kazakhstan, U.S.S.R., Nikitin.

†ACROTRETACEA

Acrotreta magna sp. nov., *gemma*, p. 246 both figd. Mid. Ordovician, U.S.A. and Canada, Cooper; *A. taconica* p. 1370 figd. Lochman.

Conotreta p. 247, *apicalis* sp. nov. p. 249, *cuspidata* sp. nov. p. 250, *depressa*, *gigantea* spp. nov. p. 251, *magna* sp. nov. p. 252, *multisinuata* sp. nov. p. 253, *plana*, *triangulata* spp. nov. p. 254, *rusti* p. 254 all figd.; *Conotreta* ? *alta*, *altirostra* spp. nov. p. 248, *concentrica* sp. nov. p. 250 all figd. Mid. Ordovician, U.S.A., Cooper.

Ephippelasma gen. nov., type species *E. minutum* sp. nov. p. 261 figd. Mid. Ordovician, U.S.A., Cooper.

Rhysotreta gen. nov. p. 258, type species *R. corrugata* sp. nov. p. 259 figd. Mid. Ordovician, U.S.A., Cooper.

Scaphelasma gen. nov. p. 259, type species *septatum* sp. nov. p. 260 figd. Mid. Ordovician, U.S.A., Cooper.

Spondylotreta gen. nov. type species *S. concentrica* sp. nov. p. 255, *declivis* p. 256 both figd. Mid. Ordovician, U.S.A., Cooper.

Torynelasma gen. nov. p. 257, type species *T. toryniferum* sp. nov. p. 258, *minor* sp. nov. p. 257, both figd. Mid. Ordovician, U.S.A., Cooper.

Undiferina gen. nov. p. 262, type species *U. rugosa* sp. nov. p. 263 figd. Mid. Ordovician, U.S.A., Cooper.

DISCINACEA

†*Lingulodiscina newberryi* var. *moorefieldana* figd. Easton.

†*Orbiculoidea eximia*, p. 275, *linvillensis* p. 276 spp. nov. both figd. Mid. Ordovician, U.S.A., Cooper; *O. nitidia* p. 89, *O.* sp. p. 90, both figd. Simorin.

†*Schizocrania filosa* p. 275 figd. Cooper.

†*Schizotreta canadaensis*, *corrugata* sp. nov. p. 277, *microthyris* sp. nov. p. 278, *pannea*, *papilliformis*, *posteroconvexa* sp. nov. p. 279, *shuleri* p. 280, *subconica*, *willardi* spp. nov. p. 281, *S.* sp. 1 p. 282, all figd. Mid. Ordovician, U.S.A., Cooper.

†*Trematis elliptopora, foerstei*, spp. nov. p. 271 figd., *huronensis*, *minneapolis*, *parva* sp. nov. figd., p. 273, ? *spinosa* sp. nov., sp. 1 both figd., sp. 2 p. 274, sp. 3 p. 275 figd; Mid. Ordovician, U.S.A., Cooper.

CRANIACEA

†*Acanthocrania* p. 283, *cumberlandensis* p. 284, *erecta*, *grandis* spp. nov. p. 284, *granulosa*, *oklahomensis* sp. nov. *setigera*, *spinosa* sp. nov. p. 285, *subquadrata* sp. nov., sp. 1 p. 286, all figd. Mid. Ordovician, U.S.A., Cooper.

†*Eoconulus* gen. nov. p. 282, type species *E. rectangulatus* sp. nov. p. 283 figd. Mid. Ordovician, U.S.A., Cooper.

†*Petrocrania cicatricula, dixonensis* sp. nov. figd. p. 287, *halli*, *hamiltonae*, *inflata* sp. nov. all figd. p. 288, ? *magna* sp. nov., *prona* p. 289 both figd., *trentonensis*, sp. 1, *P* ? sp. 2 p. 290 figd., sp. 3 p. 291 figd. Mid. Ordovician, U.S.A., Cooper.

†*Philhedra depressa, ferruginea* spp. nov. p. 291, *minor* sp. nov., ? sp. 1 p. 292 all figd. Mid. Ordovician, U.S.A., Cooper; *P. siluriana* p. 160 Curtis.

CLASS ARTICULATA

†ORTHOIDEA

KUTORGINACEA

Kutorgina cingulata p. 1370 Lochman.

ORTHACEA

Anomalorthis p. 391, *lonensis*, *nevadensis*, *oklahomensis* p. 392, *utahensis* p. 393, all figd. Cooper.

Apatorthis punctata, jugata, tenuicosta, p. 22 Kaljo et al.

Apheoorthis (?) *succica* sp. nov. p. 186 figd. Lr. Ordovician, Sweden, Tjernvik; *A. neglecta* sp. nov. p. 37, *ocha* p. 59 both figd. Ur. Cambrian and Lr. Ordovician respectively, Central Kazakhstan, U.S.S.R., Nikitin.

Archaeorthis cf. *costellata* p. 30 figd., Cooper (1); *A. biconvexa* sp. nov. p. 293 figd. Mid. Ordovician, U.S.A., Cooper.

Billingsella aliena sp. nov. p. 28, *borukävi* p. 30, *coarcta* p. 32, *fluctuosa* spp. nov. p. 34, *fluctuosa* var. *insignis* var. nov. p. 37, aff. *fluctuosa* sp. nov. p. 39, *gigantea* p. 39, *lingulaeformis* sp. nov. p. 41, *lingulaeformis* var. *seletenensis* var. nov. p. 44, *pepina* p. 46, *satpakensis* sp. nov. p. 48, *shidertensis* sp. nov. p. 50, *solidata* sp. nov. p. 51, *B.* sp. p. 53, all figd. Cambrian, Central Kazakhstan, U.S.S.R., Nikitin; *B.* *kazakh* sinuses figd. p. 274 Williams.

Campylorthis deflecta p. 430, *subplana* p. 431, both figd., Cooper.

Chaulistomella gen. nov. p. 432, type species *C. inequistriata* sp. nov. p. 435, *brevis* p. 433, *crassa* sp. nov. p. 434, *elongata* p. 435, *lebanonensis* sp. nov. p. 437, *magna* p. 438, *mira* sp. nov. p. 439, *mundula* sp. nov. p. 440, *nitens*, *obesa* spp. nov. p. 441, *rectangulata* sp. nov. p. 442, *ridleyensis* sp. nov. p. 443, *superlata* sp. nov. p. 444, sp. 1, *C.* ? sp. 2 p. 445, all figd. Mid. Ordovician, U.S.A., Cooper.

Clarkella nona p. 89, *supina* sp. nov. p. 91, *supina* var. *turgida* var. nov. p. 95, all figd. L^r. Ordovician, Central Kazakhstan, U.S.S.R., Nikitin.

Cyrtototella p. 318, *bella* p. 319, *crassicostella*, *fasciculata* sp. nov. p. 320, *grandistriata*, p. 321, *magna* sp. nov. p. 322, *minor*, *subplana* spp. nov. p. 323, *subquadrata* sp. nov. p. 324, *virginiensis* p. 325, *C.* ? sp. 1 p. 326 all figd. Mid. Ordovician, U.S.A., Cooper; *C.* aff. *kukersiana* p. 404 figd. Whittington & Williams.

Desmorthis costata sp. nov. p. 446, *nevadensis* p. 447 both figd. Mid. Ordovician, U.S.A., Cooper.

Dinorthis atavoides p. 393, *holdeni* p. 395, *interstriata* p. 396, *sweeneyi*, *tenuis* sp. nov. p. 397, *transversa* p. 398, *transversoides* sp. nov. p. 400, *venusta* sp. nov. p. 401, *virginiensis*, *willardi* spp. nov. p. 402 all figd. Mid. Ordovician, U.S.A. Cooper; *D.* *kassini* sp. nov. p. 127 figd. Ordovician, U.S.S.R. Rukavishnikova; *D.* sp. p. 629 figd. U^r. Silurian, China, Tsin.

Diparelasma cf. *magnum* p. 33 figd. Cooper (1).

Doleroides compressus p. 456, *crassus*, *extensus* p. 457, *irregularis* p. 459, *missouriensis* p. 460, *oklahomensis* p. 461, *D.* ? *ponderosus* p. 463, *regularis* p. 464, *tennesseensis* p. 465, spp. nov.; *D.* *winchelli* nom nov. pro *Orthis media* Winchell 1880, *gibbosus* p. 458, *ottawanus*, *pervetus* p. 462, *D.* sp. 1 p. 467; all figd. Mid. Ordovician, U.S.A., Cooper; *D.* aff. *gibbosus* p. 121 figd. Rukavishnikova.

Dolerorthis tenuicostata sp. nov. p. 406 figd. U^r. Ordovician North Wales, Whittington & Williams.

Dulankarella gen. nov. p. 135 type species *D. magna* sp. nov. p. 139, *fragilis* p. 136, *extraordinaria* p. 138 spp. nov. all figd. Ordovician, U.S.S.R., Rukavishnikova.

Eoorthis vicina p. 43 figd., Powell.

Eridorthis p. 383, *inexpecta* sp. nov. p. 384, figd. Mid. Ordovician, U.S.A., Cooper.

Finkelburgia logani, *roanokensis* spp. nov. p. 1166, *buttsi* p. 1167 all figd. L^r. Ordovician Virginia, Young; *F.* *pallial* sinuses figd. p. 274 Williams.

Glossorthis sp. p. 404 figd. Whittington & Williams.

Glyptorthis aff. *bellarugosa* p. 125 figd., Rukavishnikova; *G.* *alta*, *assimilis* p. 361, *bellatula* p. 364, *concinnum* p. 365, *costellata* p. 366, *crenolata* p. 367, *equiconvexa* p. 368, *glypta* p. 369, *irregularis* p. 370, *multicostellata* p. 371, *obesa*, *rara* p. 372, *senecta* p. 373, *subcarinata*, *subcircularis* p. 374, *sulcata* p. 375, *transversa* p. 376, *uncinata* p. 377, *uniformis* p. 378, *uniplicata*, *virginica* p. 379, all spp. nov. all figd.; *bellarugosa* p. 363, *G.* sp. 1 p. 381, sp. 2, sp. 3, p. 382, sp. 4 p. 383, all figd. Mid. Ordovician, U.S.A., Cooper.

Hesperonomia cf. *subtransversa* p. 31 figd., Cooper (1).

Hesperonomiella minor, *quebecensis* sp. nov. p. 337, both figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Hesperorthisidae fam. nov. p. 343 for *Hesperorthis Glyptorthis*, *Eridorthis* and *Ptychopleurella* Mid. Ordovician, U.S.A., Cooper.

Hesperorthis p. 343, *antelopensis* p. 344, *australis* p. 345, *biconvexa* p. 346, *colei* p. 347, *concava* p. 348, *crinerensis* p. 350, *dubia* p. 351, *longirostris* p. 352, *matutina* p. 353, *multicostata* p. 354, *quadrata* p. 355, *sulcata* p. 356, *tenuicostata* p. 357, all spp. nov. all figd.; *ignicula* p. 352, *tricenaria* p. 358, *virginiensis* p. 359, *H.* sp. 1, sp. 2, p. 360 all figd.; *H. ? costalis* p. 349, *costellata* p. 350, *decipiens* p. 351 all figd. Mid. Ordovician, U.S.A., Cooper; *H.* sp. diagram of pedicle opening, p. 256, Williams.

Mimella p. 468, *biconvexa* p. 468, *costellata* p. 469, *extensa* p. 470, *gilberti* p. 471, *globularis* p. 474, *intermedia* p. 476, *laticardinia* p. 477, *nucleoidea* p. 480, *similis* p. 481, *subquadrata*, *sulcata* p. 483, *transversa* p. 484, *tumida* p. 485, *ulrichi*, *valcourensis* p. 486, *virginiensis* p. 487, *wardellana* p. 489, all spp. nov. all figd.; *borealis* p. 469, *globosa* p. 472, *imperator* p. 475, all figd., *latistriata* p. 478, *minganensis* p. 479, *nuclea* p. 479 figd., *piger* p. 481 figd., *vulgaris* p. 488 figd., *M.* sp. 1, sp. 2 p. 490 figd., sp. 3 p. 491 figd., Mid. Ordovician, U.S.A. and Canada, Cooper; *M. brevis* sp. nov. p. 116 figd. Ordovician, U.S.S.R., Rukavishnikov.

Multicostella *conveza* p. 418, *geronica* p. 419, *parallela* p. 420, *plano-sulcata* p. 421, *plena* p. 422, *plicata* p. 423, *quadrata* p. 424, *rectangulata* p. 425, *robusta* p. 426, *semisulcata* p. 427, *sulcata* p. 428, all spp. nov., all figd.; *bursa* p. 416, *fasciculata* p. 418, *platys* p. 421, *saffordi* p. 427 all figd. Mid. Ordovician, U.S.A., Cooper.

Nanorthis hamburgensis p. 62 figd. Nikitin; *N. (?) billingensis* sp. nov. p. 187 figd. L^r. Ordovician Sweden, Tjernvik.

Nicolella p. 316, *actoniae*, *angulata* sp. nov. p. 317, *strasburgensis* p. 318 all figd. Mid. Ordovician, U.S.A. and Estonia, Cooper; *N. humilis* sp. nov. p. 405 figd. U^r. Ordovician North Wales, Whittington & Williams.

Nisusia nasuta sp. nov. p. 17, *nasuta* var. *ramosa* var. nov. p. 19, *N.* sp. p. 21, all figd., Cambrian, Central Kazakhstan, U.S.S.R., Nikitin.

Nothorthis delicatula, *tarda* sp. nov. p. 315, *transversa* sp. nov. p. 316 all figd., Mid. Ordovician, U.S.A. and Canada, Cooper.

Orthambonites alabamensis p. 30 figd., Cooper (1); *O.* p. 294, *angulatus* p. 294, *bellus* p. 295, *bielsteini* p. 296, *bifurcatus* p. 297, *blountensis*, *brachio-phorus* p. 298, *dinorthoides* p. 301, *divaricatus* p. 302, *friendsvillensis* p. 303, *minus* p. 304, *minutus* p. 305, *mostellerensis* p. 306, *multicostellatus*, *neumani* p. 307, *occidentalis* p. 308, *parvicrassicostatus* p. 309, *rectangulatus* p. 310, *rotundiformis* p. 311, *subconvexus* p. 312, *tennesseensis* p. 313, *tenuicostatus* p. 314, all spp. nov. all figd.; *acutiplicatus* p. 294, *buttsi* p. 300, *paucicostatus* p. 310, all figd.; *eucharis* p. 303, *michaelis* p. 304, *minuscule* p. 305, *O. ? exfoliatus* p. 303 Mid. Ordovician, U.S.A., Cooper.

Orthidiella carinata, *costellata* sp. nov. p. 338, *extensa*, *longuelli* p. 339, *O.* sp. 1 p. 340 all figd. Mid. Ordovician, U.S.A., Cooper.

Orthidium bellulum, *fimbriatum* sp. nov. p. 340 both figd., *gemmiculum* p. 341 Mid. Ordovician, U.S.A. and Canada, Cooper; *O.* aff. *gemmiculum* p. 30 figd. Cooper (1).

Orthostrophia pallial sinuses figd. p. 274 Williams; *O.* sp. p. 75 figd. Talent (1).

Phragmorthis gen. nov. p. 508 type species *P. buttsi* sp. nov. p. 510, *crassa* sp. nov. p. 511, both figd. Mid. Ordovician, U.S.A., Cooper.

Platystrophia precedens major subsp. nov. p. 402 figd. U^r. Ordovician North Wales, Whittington & Williams; *P. pedemontana* sp. nov. p. 12 figd. L^r. Ordovician, Argentina, Rusconi.

Plectorthis australis p. 447, *compacta* p. 448, *lebanonensis* p. 449, *obesa* p. 450, *pennsylvanica*, *ponderosa* p. 451, *punctata* p. 452, *symmetrica* p. 453, *tenuis*, *transversa* p. 454, sp. 1, sp. 2, p. 455, all spp. nov. all figd.; *mazourkaensis*, *patula* p. 450 figd. Cooper.

Pleurorthis gen. nov. p. 329, type species *P. fascicostellata* sp. nov. p. 331, *conveza* sp. nov. p. 329, *costellata* sp. nov. p. 330, *imbecilis*

p. 331, *tritonina* p. 332, *P.* sp. 1 p. 332, sp. 2 p. 333, all figd., *corinna* p. 330, Mid. Ordovician, U.S.A. and Canada, **Cooper**.

Productorthis p. 333, *agilera* p. 335, *americana* sp. nov. p. 336, both figd. Mid. Ordovician, U.S.A., **Cooper**; *P. mitchelli* sp. nov. p. 179 figd. U^r. Ordovician, Ireland, **Williams** (1).

Ptychopleurella p. 385, *globularis* p. 385, *glypta* p. 386, *mediocostata* p. 387, *oklahomensis* p. 388, *rectangulata* p. 389, *sulcata* p. 390, *uniplicata* p. 391, all spp. nov. all figd.; *lamellosa* p. 387, *porcia* p. 389, both figd. Mid. Ordovician, U.S.A., **Cooper**.

Scaphorthis gen. nov. p. 502, type species *S. virginiensis* sp. nov. p. 505, *kayi* p. 503, *perplexa* p. 504 spp. nov., *S.* sp. 1, p. 506 all figd. Mid. Ordovician, U.S.A. **Cooper**.

Schizophorella kasachstanica sp. nov. p. 118 figd. Ordovician, U.S.S.R., **Rukavishnikova**.

Skenidioides convexus p. 492, *costatus* p. 493, *elongatus* p. 494, *mediocostatus* p. 496, *obtusus* p. 497, *oklahomensis* p. 498, *perfectus* p. 499, *platys rectangulatus* p. 500, *transversus* p. 501, all spp. nov. all figd.; *anthoniensis* p. 490, *billingsi* p. 492, *halli* p. 495, all figd. Mid. Ordovician, U.S.A., **Cooper**.

Taphrorthis gen. nov. p. 326 type species *T. emarginata* sp. nov. p. 327, *peculiaris* sp. nov. p. 328 both figd. Mid. Ordovician, U.S.A., **Cooper**.

Trematorthis masoni p. 341, *robusta*, *tenuis* spp. nov. p. 342, all figd. Mid. Ordovician, U.S.A., **Cooper**.

Tropidothyris gen. nov. p. 507, type species *T. pentagona* sp. nov. p. 507 figd. Mid. Ordovician, U.S.A., **Cooper**.

Valcourea p. 404, *austriana* p. 405, *brevicarinata* p. 406, *deckeri* p. 407, *obscura*, *plana* p. 409, *semicarinata* p. 410, *tenuis* p. 412, *transversa* p. 413, all spp. nov. all figd.; *angulata* p. 405, *intracarinata* p. 408 figd., *strophomenoides* p. 411 figd., *ventrocarinata* p. 414 figd., *V.* sp. p. 415 Mid. Ordovician, U.S.A., **Cooper**.

†DALMANELLOIDEA

DALMANELLACEA

Gen. et sp. indet. p. 1006 figd., **Cooper**.

Bekkerella gen. nov. p. 471 type species *B. bekkeri* sp. nov. p. 474 figd. L^r. Silurian, Estonia S.S.R., **Rosenstein**.

Cristiferina gen. nov. p. 961 type species *C. cristata* sp. nov. p. 962, *cristifera* sp. nov. p. 963, both figd. Mid. Ordovician, U.S.A., **Cooper**.

Cyclomyonia gen. nov. p. 974 type species *C. peculiaris* sp. nov. p. 975 figd. Mid. Ordovician, U.S.A., **Cooper**.

Dalmanella costellata p. 948, *crassicostellata*, *rara* p. 949, *sculpta* p. 950, *sulcata* p. 951, all spp. nov. all figd., *D. winchelli* nom. nov. pro *Orthis* (*Dalmanella*) *hamburgensis*? *Winchell* & *Schuchert* 1895 (non *Walcott* 1884) p. 953 figd. Mid. Ordovician, U.S.A., **Cooper**; *orthosulcata* sp. nov. p. 629 figd. U^r. Silurian, China, **Tsin**.

Dicaelosia biloba p. 75, **Talent** (1).

Diorthelasma gen. nov. p. 997, type species *D. parvum* sp. nov. p. 998 figd. Mid. Ordovician, U.S.A., **Cooper**.

Elasmothyris gen. nov. p. 983, type species *E. concinnula* sp. nov. p. 985 figd. Mid. Ordovician, U.S.A., **Cooper**.

Eremotrema gen. nov. p. 959, type species *E. biconvexum* sp. nov. p. 960 figd. Mid. Ordovician, U.S.A., **Cooper**.

Fascifera p. 998, *convexa*, *dalmanelloidea* p. 999, *sulcata* p. 1003, spp. nov., *stonensis* p. 1001, *subcarinata* p. 1002, *F.* sp. 1 p. 1004, all figd. Mid. Ordovician, U.S.A., **Cooper**.

Hirnantia p. 1005, *sagittifera* p. 1152 figd. **Cooper**.

Horderleyella? sp. p. 408 figd. **Whittington & Williams**.

Howellites sp. p. 964 figd., **Cooper**.

Laticrura gen. nov. p. 979 type species *pionodema* sp. nov. p. 983, *heteropleura* p. 980, *latibrachiata* p. 981, *magna* p. 982, spp. nov. all figd. Mid. Ordovician, U.S.A., **Cooper**.

Onniella? *americana* p. 953, ? *planoconvexa* p. 955 spp. nov. both figd., *paquetensis* p. 955, *fertilis* p. 954 figd. Mid. Ordovician, U.S.A., **Cooper**.

Onniella (*Soudleyella*) cf. *avelinei* p. 407 figd. **Whittington & Williams.**

Orthis (*Schizophoria*) *resupinata* var. *keyserlingiana* pp. 17, 37, 82 figd. **Zakowa.**

Parmorthis invalid objective synonym of *Resserella* p. 956, **Cooper**; *P. basalis* p. 150 **Curtis.**

Paucicrura nom. nov. pro *Dalmanella* Schuchert & Cooper 1932 (non Hall & Clarke) p. 956, type species *Orthis rogata* Sardeson p. 957, *matutina* p. 957, *subplana*, *virginica* p. 958, all figd. Mid. Ordovician, U.S.A., **Cooper.**

Paurorthis fasciculata p. 965, *fascifera* p. 966, *gigantea* p. 967, *longa* p. 968, *macrodeltoidea*, *magna* p. 969, *ponderosa* p. 971, *spinosa* p. 972, all spp. nov. all figd.; *catawbensis* p. 964, *parva* p. 971, *P. sp. 1* p. 973, sp. 2 p. 974, all figd. Mid. Ordovician, U.S.A. and Russia, **Cooper.**

Pionodema camerata p. 986, *crassipunctata* p. 989, *sulcata* p. 994, *tennesseensis* p. 995, *uniplicata* p. 996 all spp. nov. all figd.; *circularis* p. 987, *conradi* p. 988, *minuscule* p. 991, *subaequata* p. 992, all figd., *sinuata* p. 992, *P. sp. 1* p. 996, Mid. Ordovician, U.S.A., **Cooper.**

Resserella (*Howellites*) sp. p. 408 figd., **Whittington & Williams.**

Reuschella americana p. 976, *vespertina* p. 979 spp. nov., *edsoni* p. 978, all figd. Mid. Ordovician, U.S.A., **Cooper.**

Salopia gen. nov. p. 409, type species *Orthis salteri* Davidson 1871; *salteri gracilis* subsp. nov. p. 410 figd. U. Ordovician North Wales, **Whittington & Williams.**

Schizophoria mcfarlanei, *S. sp.*, *manitobaensis*, *allani*, *lata*, *athabascensis*, cf. *mcfarlanei*, *iowaensis*, *striatula*, all figd. **Warren & Steelk**; *S. resupinata* p. 119 **Parkinson.**

†CLITAMBONITOIDEA

CLITAMBONITACEA

Atelelasma gen. nov. p. 517 type species *A. perfectum* sp. nov. p. 522, *decorticatum* p. 518, *dorsoconvexum* p. 519, *obscurum* p. 520, *oklahomense* p. 521, *planum*, *platys* p. 523, *sulcatum* p. 524, *variabile* p. 525, all

spp. nov., *holstoni* p. 520, *A. sp. 1*, sp. 2 p. 526, *A. ? multicostum* p. 520, all figd. Mid. Ordovician, U.S.A., **Cooper.**

Atelelasmatinae subfam. nov. p. 516, for *Atelelasma* & *Apomatella* Mid. Ordovician, U.S.A., **Cooper.**

Clinambon anomalus, *inflatus* p. 23, **Kaljo et al.**

Clitambonites pallial sinuses figd. p. 274, **Williams.**

Eremotoechia gen. nov. p. 513 type species *E. claudi* sp. nov. p. 514, *alabamensis* p. 514, *silicica* p. 515 spp. nov. all figd. Mid. Ordovician, U.S.A., **Cooper.**

Kullervo ornata, *parva* p. 527, *punctata* p. 528, *sulcata* p. 529, all spp. nov. all figd., Mid. Ordovician, U.S.A., **Cooper**; *K. aff. panderi* p. 412 figd. **Whittington & Williams.**

Polytoechia ? oakensis p. 512, **Cooper.**

Pomatotrema cf. *oklahomense* p. 32 figd. **Cooper (1).**

Tritoechia typica p. 512 figd., **Cooper**; *T. cf. sinuata* p. 31 figd. **Cooper (1).**

Vellamo wesenbergensis p. 89 figd. **Martinsson.**

†SYNTROPHIOIDEA

SYNTROPHIACEA

Brevicamera gen. nov. p. 560, type species *B. camerata* sp. nov. p. 561 figd. Mid. Ordovician, U.S.A., **Cooper.**

Brevicameridae fam. nov. p. 560 for *Brevicamera* only, **Cooper.**

Cambrotrophia mailanensis sp. nov. p. 67, figd. Cambrian, Central Kazakhstan, U.S.S.R., **Nikitin.**

Camerella arkansasensis p. 34 figd., **Cooper (1)**; *C. anteroplicata* sp. nov. p. 562, *costellata* p. 565, *edmundsoni* p. 566, *elliptica* p. 567, *globularis* p. 568, *gregeri* p. 569, *immatura*, *indefinita* p. 570, ? *leiorhynchoidea*, *minuta* p. 571, *multiplicata* p. 572, *nuda* p. 573, *obesa*, *oklahomensis* p. 574, *pennsylvanica* p. 575, *perplexa* p. 576, *pulchra* p. 578, *tennesseensis* p. 580, *triangulata* p. 581, *tumida umbonata* p. 582, *unicostata* p. 583, *ventricosa* p. 584, all spp. nov. all figd.; *bella* p. 563, *breviplicata* p. 565, *parva* p. 575,

plicata p. 577, *polita* p. 578, ? *primigenia* p. 578, *quadriplicata* p. 579, *varians* p. 583, *volborthi* p. 585, sp. 1, sp. 2, sp. 3 p. 586, sp. 4 p. 587 all figd. Mid. Ordovician, U.S.A. and Canada, Cooper; *C. hemiplicata* var. *rotunda* p. 129 figd. Rukavishnikova.

Diaphelasma bueyana sp. nov. p. 11 figd. L^r. Ordovician, Argentina, Ruseconi.

Glyptotrophia sp. p. 80 figd. Nikitin.

Huenella biplicata sp. nov. p. 73 figd. Cambrian, Central Kazakhstan, U.R.S.S., Nikitin.

Idiostrophia p. 587, *nuda*, *paucicostata* p. 588, *plicata* p. 589, all spp. nov., *costata* p. 588, *perfecta* p. 589, sp. 1 p. 590, all figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Liricamera gen. nov. p. 592, type species *L. nevadensis* sp. nov. p. 592 figd. Mid. Ordovician, U.S.A., Cooper. *Neostrophia subcostata* p. 591, *N. ? gregaria* sp. nov. p. 590, *N. ?* sp. 1 p. 591, all figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Palaeostrophia cf. *orthia* p. 77 figd. Nikitin.

Parastrophina bilobata sp. nov. p. 605 figd., *bernensis* p. 604, *hemiplicata* p. 606 figd., *rotundiformis* p. 607 *P.* sp. 1, p. 608 both figd., *P.* sp. 2 p. 608 Mid. Ordovician, U.S.A., Cooper.

Perimecocoelia gen. nov. p. 593 type species *P. semicostata* sp. nov. p. 595, *elliptica* p. 595, *triangulata* p. 596 spp. nov., all figd. Mid. Ordovician U.S.A., Cooper.

Plectocamara gen. nov. p. 596, type species *P. costata* sp. nov. p. 598, *aseptata* p. 597, *erecta* p. 599, *magna*, *rotunda* p. 600, *sulcata* p. 601, *transversa* p. 602, all spp. nov. all figd. Mid. Ordovician, U.S.A., Cooper.

Porambonites ? umbonatus sp. nov., *P. ?* sp. 1 p. 609, sp. 2, sp. 3 p. 610, sp. 4 p. 611, all figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Rhysostrophia elliptica, *nevadensis*, *occidentalis* figd., *transversa* figd., p. 559, *R.* sp. 1, sp. 2 both figd. p. 560 Cooper.

Stenocamara gen. nov. p. 602, type species *S. perplexa* sp. nov. p. 603, *bicostata* sp. nov. p. 603 both figd. Mid. Ordovician, U.S.A., Cooper.

Stenocamarinae subfam. nov. p. 602, for *Stenocamara* only, Mid. Ordovician, U.S.A., Cooper.

Syntrophia calcifera, *S.* sp. p. 44, *nonus* p. 45, all figd., Powell.

Syntrophia campbelli p. 1168 figd. Young.

Tetralobula delicatula p. 1168 figd. Young; *T. latens* sp. nov. p. 82 figd., U^r. Cambrian, Central Kazakhstan U.S.S.R., Nikitin; *T. pallial sinuses* figd. p. 274 Williams.

Yangtzeella poloï var. *minor* var. nov., *yohi* sp. nov. p. 632 both figd. U^r. Silurian, China, Tsin.

†PENTAMEROIDEA

PENTAMERACEA

Clorinda spirolophe figd. p. 262 Williams.

Didymelasma gen. nov. p. 615 type species *D. longicirurum* sp. nov. p. 617, *abruptum* sp. nov. p. 616, both figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Gypidula cf. *comis*, *cornuta*, both figd., Warren & Stelck; *G. pelagica* p. 76 figd., Talent (1).

Parallelasma gen. nov. p. 611 type species, *P. pentagonum* sp. nov. p. 614 figd. Mid. Ordovician, U.S.A., Cooper.

Parallelasmatidae fam. nov. p. 611 for *Parallelasma*, *Salonia* and *Didymelasma* Mid. Ordovician, U.S.A., Cooper.

Salonia magnaplicata p. 615 figd. Cooper.

Stricklandia lens var. *ultima* p. 148 Curtis.

†TRIPLESIOIDEA

TRIPLESIACEA

Cliftonia striata, *dorsata* p. 23, Kaljo et al.

Cliftonia (Oxoplectia) mutabilis sp. nov. p. 411 figd. U^r. Ordovician North Wales, Whittington & Williams.

Onychoplecia gen. nov. p. 529, type species *O. brevirostris* sp. nov. p. 530, *kindlei* p. 532, *matutina*, *obesa* p. 534, *tenuis* p. 535, all spp. nov. all figd., *gracilis* p. 531, *longirostris* p. 533, *O.* sp. 1 p. 536 all figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Oxoplecia abnormis p. 539, *costellata*, *depressa* p. 540, *eidsonensis* p. 541, *filosa* p. 542, *gibbosa* p. 543, *globularis* p. 544, *magnaplicata* p. 546, *marmorata* p. 547, *monitorensis* p. 548, *multicostellata* p. 549, *nevadensis* p. 550, *parva* p. 552, *pennsylvanica* p. 553, *planiventra* p. 554, *planulata* p. 554, *plicata* p. 555, *recta* p. 556, all spp. nov., all figd., *gouldi* p. 545, *holstenensis* p. 545, *occidentalis* p. 551, *simulatrix* p. 556, all figd. Mid. Ordovician, U.S.A., Cooper.

Triplexia carinata p. 537, *subcarinata* p. 538, spp. nov., *T.* sp. 1 p. 539, all figd. Mid. Ordovician, U.S.A., Cooper.

STROPHOMENOIDEA

†PLECTAMBONITACEA

Anisopleurella gen. nov. p. 804, type species *A. tricornostellata* sp. nov. p. 806, *inaequistriata* sp. nov. p. 805, both figd. Mid. Ordovician, U.S.A., Cooper.

Apatomorpha gen. nov. p. 709, type species *Rafinesquina pulchella* Raymond, p. 709 figd. Mid. Ordovician, U.S.A., Cooper.

Aporthophylla p. 698, *typa*, *aurora* p. 1169 figd. Cooper; *A. kasachstanica* sp. nov. p. 123 figd. Ordovician Rukavishnikova.

Bilobia gen. nov. p. 759, type species *B. hemisphaerica* sp. nov. p. 760, *musca* p. 761, *pisum*, *virginiensis* sp. nov. p. 762, all figd. Mid. Ordovician, U.S.A. and Estonia, Cooper.

Bimuria p. 764, *buttsi* p. 765, *immatura* p. 766, *parvula* p. 769, *siphonata* p. 770, all spp. nov., *lamellosa* p. 767, *superba* p. 771, *B.* sp. 1 p. 772, *B. ? matutina* sp. nov. p. 768, all figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

Bimuriidae fam. nov. p. 764 for *Bimuria* and *Craspedella* Mid. Ordovician, U.S.A., Cooper.

Chonetoida virginica sp. nov. p. 804 figd. Mid. Ordovician, U.S.A., Cooper.

Craspedelia gen. nov. p. 772, type species *C. marginata* sp. nov. p. 773 figd. Mid. Ordovician, U.S.A., Cooper.

Eoplectodonta p. 807, *foersteri* sp. nov. p. 811, *alternata* p. 808, *E.* sp. 1 p. 813, *E. ? dubia* sp. nov. p. 810, *triradiata* p. 812, all figd. Mid. Ordovician, U.S.A., Cooper.

Glyptambonites gen. nov. p. 712 type species *G. musculosus* sp. nov. p. 715 figd., *glyptus* sp. nov. p. 713 figd., *G. ? platys* p. 716, Mid. Ordovician, U.S.A., Cooper.

Goniotrema p. 711, *perplexum* p. 1204 figd. Cooper.

Hesperomena gen. nov. p. 744, type species, *H. leptelloidea* sp. nov. p. 745 figd. Mid. Ordovician, U.S.A., Cooper.

Hesperomeninae subfam. nov. p. 744 for *Hesperomena* only Mid. Ordovician, U.S.A., Cooper.

Ingria p. 700, *cloudi* p. 1169 figd. Cooper.

Isophragma gen. nov. p. 733 type species, *I. ricevillense* sp. nov. p. 737, *biseptatum* p. 734, *extensum* p. 735, *ponderosum* p. 737, *subabbreviatum* p. 738, *sulcatum* p. 739, all spp. nov., *I.* sp. 1 p. 740, all figd. Mid. Ordovician, U.S.A., Cooper.

Isophragminae subfam. nov. p. 733, for *Isophragma* only Mid. Ordovician, U.S.A., Cooper.

Leptellina abbreviata p. 747, *bella* p. 748, *incompta* p. 750, *platys* p. 751, *primaria* p. 752, *pulchra* p. 753, *subcarinata* p. 754, *sublamellosa* p. 755, *transversa* p. 758, all spp. nov., *L.* sp. 1 p. 759, *delicatula* p. 749, *occidentalis* p. 751, *tennesseensis* p. 756, all figd. Mid. Ordovician, U.S.A., Cooper; *L. derfelensis* p. 415 figd. Whittington & Williams.

Leptelloidea leptelloides p. 763 figd. Cooper; *L. multicostata* p. 132, *subquadrata* sp. nov. p. 134, both figd. Ordovician, U.S.S.R., Rukavishnikova.

Leptelloidinae subfam. nov. p. 763, for *Leptelloidea* only Cooper.

Leptestia cita sp. nov. p. 130 figd., Ordovician, U.S.S.R., Rukavishnikova.

Palaeostrophomena p. 700, *angulata* p. 702, *resupinata* p. 704, *superba* p. 706, *subtransversa* p. 707, spp. nov., *P.?* *rugosa* p. 705, all figd., Mid. Ordovician, U.S.A., Cooper; *P. magnifica* sp. nov. p. 414 figd. Ur. Ordovician North Wales, Whittington & Williams.

Paucicostella gen. nov. p. 711, type species *P. canadensis* sp. nov. p. 712 figd. Mid. Ordovician, Canada, Cooper.

Pelonomia gen. nov. p. 699, type species, *Orthis delicatula* Billings p. 699 figd. Mid. Ordovician, Canada, Cooper.

Petroria p. 746, *rugosa* p. 1215 figd. Cooper.

Plectodonta lenis sp. nov. p. 417 figd. Ur. Ordovician North Wales Whittington & Williams; *P. minor* p. 563 figd., Drot; *P. ptycholophe* figd. p. 262 Williams.

Ptychoglyptiinae subfam. nov. p. 815, for *Ptychoglyptus* only Mid. Ordovician, U.S.A., Cooper.

Ptychoglyptus p. 815, *virginiensis* p. 818; *P.?* *kindlei* sp. nov. p. 816, *matura* sp. nov. p. 817 both figd., *P.?* sp. 1 p. 819 Mid. Ordovician, U.S.A. and Canada, Cooper.

Sericoidea abdita sp. nov. p. 418 figd. Ur. Ordovician North Wales Whittington & Williams.

Sowerbyella aequicostellata p. 774, *angulata* p. 776, *cava* p. 777, *compacta* p. 778, *eximia* p. 781, *indistincta* p. 782, *medioplicata* p. 784, *merriami*, *monilifera* p. 785, *nasuta* p. 787, *parva* p. 789, *perplexa* p. 790, *plicatifer* p. 791, *silicica* p. 793, *socialis* p. 794, *variabilis* p. 798, *varicostellata* p. 799, *vulgata* p. 801, all spp. nov.; *silicica nana* p. 794, *socialis crassa* p. 796 subsp. nov., *aequistriata* p. 775, *bellarugosa* p. 777, *curdsvillensis* p. 780, *lebanonensis* p. 782, *negritus* p. 788, *punctostriata* p. 792, *subcarinata* p. 797, *S.* sp. 1, sp. 2, p. 802, sp. 3, sp. 4 p. 803, all figd., Mid. Ordovician, U.S.A., Cooper; *S. schmidtii* p. 383 figd., Jaanusson (1);

S. multiseptata sp. nov. p. 416, *S.* sp. p. 417 both figd. Ur. Ordovician North Wales Whittington & Williams; *S. sericea* p. 141 figd. Rukavishnikova.

Sowerbyites p. 723, *delicatus*, *gilderleevei* p. 725, *hami* p. 727, *lamellosus* p. 728, all spp. nov., *subnasutus* p. 729, *triseptatus* p. 730, *S.* sp. 1 p. 732, all figd. Mid. Ordovician, U.S.A., Cooper.

Syndielasma gen. nov. p. 742, type species *S. biseptatum* sp. nov. p. 743 figd. Mid. Ordovician, U.S.A., Cooper.

Syndielasmatidae fam. nov. p. 742, for *Syndielasma* only Mid. Ordovician, U.S.A., Cooper.

Taffia planoconvexa p. 697 figd. Cooper.

Taphrodonta gen. nov. p. 740, type species *T. parallela* sp. nov. p. 741 figd. Mid. Ordovician, U.S.A., Cooper.

Taphrodontidae fam. nov. p. 740, for *Taphrodonta* only Mid. Ordovician, U.S.A., Cooper.

Titanambonites gen. nov. p. 717 type species *T. medius* sp. nov. p. 721, *convexus* p. 719, *praecursor* p. 722, all spp. nov., *amplus* p. 718, *crassus* p. 720, *T.* sp. 1 p. 723, all figd. Mid. Ordovician, U.S.A., Cooper.

Toquimia p. 698, *kirki* pp. 1169, 1193 figd. Cooper.

Xenambonites gen. nov. p. 813, type species, *X. undosus* sp. nov. p. 815 figd. Mid. Ordovician, U.S.A., Cooper.

Xenambonitinae subfam. nov. p. 813, for *Xenambonites* only Mid. Ordovician, U.S.A., Cooper.

†STROPHOMENACEA

Actinomena asmusi, *occidens*, *orta*, *quintana*, *vanadis*, p. 22, Kaljo et al.

Bellimurina gen. nov. p. 854 type species *Leptaena charlottae* Winchell & Schuchert p. 855 figd. *compressa* p. 855, *concentrica*, *parviplicifera* p. 856, *subquadrata* p. 857, *sulcata* p. 858, all spp. nov., *B.* sp. 1 p. 858, sp. 2 p. 859, all figd. Mid. Ordovician, U.S.A., Cooper.

Brachyprion compressus p. 148
Curtis.

Colaptomena gen. nov. p. 889 type
species *C. leptostrophoidea* sp. nov.
p. 890, figd. Mid. Ordovician, U.S.A.,
Cooper.

Christiania auriculata p. 860 *platys*
p. 861, spp. nov., *subquadrata* p. 862,
trentonensis p. 865, *trentonensis brevis*
p. 866, all figd., Mid. Ordovician,
U.S.A., **Cooper**; *C. subquadrata*,
oblonga p. 23, **Kaljo et al.**; *C. tenui-*
cincta p. 148, *hastata* sp. nov. p. 149,
both figd. Ordovician, U.S.S.R.,
Rukavishnikova.

Cliftonia spiriferoides p. 151, *sub-*
craigensis sp. nov. p. 152, both figd.
Ordovician, U.S.S.R., **Rukavish-**
nikova.

Cyphomena gen. nov. p. 840 type
species *Leptaena homostriata* Butts
p. 843, *angulata* p. 841, *grandis* p.
842, spp. nov., *C. ? radialis* p. 844 all
figd. Mid. Ordovician, U.S.A. and
Canada, **Cooper.**

Dactylogonia p. 824, *alternata* p.
825, *concentrica* p. 826, *extensa* p. 827,
magna p. 829, *magnifica* p. 830,
marmorata p. 831, *obtusa* p. 832,
parva p. 834, *sculpturata*, *strasburgen-*
sis p. 835, *subaequicostellata*, *trans-*
versa p. 836, all spp. nov., all figd.,
geniculata p. 827, *incrasata* p. 828,
obsoleta p. 831 figd., *palustris* p. 833,
prona p. 834, *D.* sp. 1 p. 837 figd.,
sp. 2, sp. 3, sp. 4, sp. 5 p. 838 figd.,
sp. 6, sp. 7 p. 839 figd., sp. 8 p. 840
figd. Mid. Ordovician, U.S.A. and
Canada, **Cooper.**

Davidsonia spirolophe figd. p. 262
Williams.

Douvillina arcuata figd. **Warren &**
Stelck.

Douvillina (Mesodouvillina) genicu-
lata sp. nov. p. 16 figd. U^r. Silurian
Great Basin, U.S.A., **Waite.**

Douvillinaria variabilis figd. **War-**
ren & Stelck.

Furcitella gen. nov. p. 875 type
species *F. plicata* sp. nov. p. 877,
scofieldi p. 878, both figd. Mid.
Ordovician, U.S.A., **Cooper.**

Glyptomena gen. nov. p. 881, type
species *G. sculpturata* sp. nov. p. 885,
parvula sp. nov. p. 883, *G.* sp. 1

p. 885, all figd.; *G. ? bella* sp. nov.
p. 882, *distans* p. 883 both figd.,
minganensis p. 883, *prisca* p. 884
figd. Mid. Ordovician, U.S.A.,
Cooper.

Hesperinia gen. nov. p. 822, type
species *H. kirki* sp. nov. p. 822 figd.
Mid. Ordovician, U.S.A., **Cooper.**

Holtehdahlina p. 879, *sulcata* p. 1222
figd. **Cooper.**

Kassinella gen. nov. p. 50, type
species *K. globosa* sp. nov. p. 51
figd. Ordovician, Kazakhstan,
U.S.S.R., **Borissiak.**

Kirkina millardensis p. 866, **Cooper.**

Kjaerina sp. p. 420 figd. **Whitting-**
ton & Williams.

Leptaena sp. diagram of pedicle
opening p. 256, pallial sinuses figd.
p. 274, **Williams**; *L.* sp. p. 419 figd.,
Whittington & Williams; *L. analoga*
p. 90, *normalis* sp. nov. p. 92, *L.* sp.
p. 93, all figd. L^r. Carboniferous,
Kazakhstan, U.S.S.R., **Simorin**; *L.*
ordovicia sp. nov. p. 820 figd.
Mid. Ordovician, U.S.A., **Cooper**;
L. reedi p. 12 **Rusconi**; *L. thomsonen-*
sis sp. nov. p. 76 figd., U^r. Silurian,
Victoria, **Talent (1).**

Leptaenidae fam. nov. p. 820, for
Leptaena, *Hesperinia*, *Teratelasma*,
Dactylogonia, *Cyphomena*, *Muri-*
nella, *Limbimurina* and *Bellimurina*
Mid. Ordovician, U.S.A., **Cooper.**

Leptostrophia canace figd., **Warren**
& Stelck.

Limbimurina gen. nov. p. 851
type species *L. insueta* sp. nov. p.
853, *brevilimbata* sp. nov. p. 852
Mid. Ordovician, U.S.A., **Cooper.**

Luhaia gen. nov. type species *L.*
vardi sp. nov. p. 1091 figd. U^r.
Ordovician, Estonia, **Rümsuks.**

Macrocoelia gen. nov. p. 890 type
species *M. obesa* sp. nov. p. 895,
bella p. 891, *elegantula* p. 893, *occi-*
dentalis p. 896, *ornata* p. 897, *platys*
p. 898, *plebeia*, *rotunda* p. 899, all
spp. nov., all figd., *champlainensis*
p. 892, *duplistriata* p. 893 figd.,
magna p. 894 figd., *ruedemanni*, *M.*
sp. 1, p. 900 Mid. Ordovician, U.S.A.,
Cooper.

Microtrypa atilis, ? *nasuta* p. 879,
Cooper.

Murinella gen. nov. p. 844 type species *M. partita* sp. nov. p. 847, *biconvexa* p. 845, *cancellata*, *muralis* p. 846, *parva* p. 848, *plana*, *semireducta* p. 849, *speciosa* p. 850, all spp. nov., *M.* sp. 1 p. 850, sp. 2 sp. 3 p. 851, all figd. Mid. Ordovician, U.S.A., Cooper.

Nervostropharia rockfordensis figd. Warren & Stelck.

Öpikina Canadian species listed p. 923, *Ö. alata* p. 903, *bellula* p. 904, *dorsatiformis* p. 905, *eximia* p. 906, *expatiata* p. 907, *extensa* p. 908, *formosa* p. 909, *glabella* p. 910, *gregaria* p. 911, *lirata* p. 912, *maja*, *matutina* p. 913, *nasuta* p. 914, *parvula* p. 915, *pulchella* p. 916, *quadrata* p. 917, *speciosa* p. 918, *subplanodorsata* p. 920, *transversa* p. 921, *varia* p. 922, all spp. nov. all figd., *clara* p. 905, *inquassa* p. 912 figd., *minnesotensis* p. 914 figd., *septata* p. 918 figd., *transitionalis* p. 921, *wagneri* p. 923, *Ö.* sp. 1 figd., sp. 2 p. 924, sp. 3, sp. 4, sp. 5 figd., p. 925; *Ö. ? dubia* sp. nov. p. 906, *planulata* sp. nov. p. 916 figd. Mid. Ordovician, U.S.A., Cooper.

Palaeostrophomena pallial sinuses figd. p. 274 Williams.

Pionomena gen. nov. p. 901 type species, *P. neumani* sp. nov. p. 902, *P. ? dubia* p. 901, *P. pulchra* p. 903 spp. nov., all figd. Mid. Ordovician, U.S.A., Cooper.

Platymena gen. nov. p. 879 type species *P. plana* sp. nov., *P. ? bellatula* sp. nov. p. 880 both figd. Mid. Ordovician, U.S.A., Cooper.

Pseudoderbyia netschajewi sp. nov. p. 52 figd. L^r. Permian, Kazakhstan, U.S.S.R., Licharew.

Rafineskina [*Rafinesquina*] *quebradiana* p. 13 Rusconi.

Rafinesquina Canadian species listed p. 888, *R. planulata* sp. nov. p. 886 figd., *lennoxensis*, *oliformis* p. 886, *prestonensis* p. 887, *sinclairi* p. 887, *trentonensis* p. 888 figd. Mid. Ordovician, U.S.A., Cooper.

Rhipidomena gen. nov. p. 866 type species *Strophomena tennesseensis* Willard 1928 p. 870, *flicostellata* p. 867, *mesteri* p. 868, *subparallela* p. 870, all spp. nov., *tenuitesta* p. 872,

R. sp. 1 p. 873, all figd. Mid. Ordovician, U.S.A., Cooper.

Stropheodonta subdemissa plicata, *iowaensis*, *umbonata*, cf. *dorsata*, *costata* var. *independensis*, all figd. Warren & Stelck.

Strophomena pallial sinuses figd. p. 274 Williams; *Strophomena anomala* p. 927, *basilica* p. 930, *basilicoidea*, *bellilineata* p. 931, *costellata* p. 933, *crinerensis* p. 934, *fasciculata* p. 936, *grandimusculosa* p. 937, *oklahomensis* p. 942, *planobesa* p. 943, *platyumbona* p. 945 all spp. nov. all figd. *okulitchi* nom. nov. pro. *S. corrugata* Okulitch 1935 (non Conrad 1842), *auburnensis* p. 928 figd., *auburnensis impressa* p. 928, *auburnensis nasuta* subsp. nov. p. 929 figd., *billingsi* p. 932, *canadensis* p. 932 figd., *conradi* p. 933, *costellata* p. 933 figd., *delicatula*, *dignata*, *exigua* p. 935, *filitexta* p. 936, *filitexta obesa* p. 937, *grandimusculosa* p. 937 figd., *grandis*, *inconsueta*, *incurvata* p. 938, *inspeciosa* p. 939 figd., *magna* p. 940, *medialis* p. 940 figd., *minuta* p. 941, *mollis*, *musculosa* p. 942, *oklahomensis* p. 942 figd., *planumbona* p. 944 figd., *planumbona praecipita* p. 944 *plattinensis*, *platinensis crassa* p. 945, *platyumbona* p. 945 figd., *rotunda*, *septata*, *venustula* p. 946; *S.* sp. 1, p. 947 figd.; *S. ? millionensis affinis* p. 941, *sculpturata* p. 946 figd. Mid. Ordovician, U.S.A. and Canada, Cooper; *S. dubia* sp. nov. p. 143, aff. *rigida* p. 144, *S. ?* sp. p. 146, all figd. Ordovician, U.S.S.R., Rukavishnikova; *S. waltoni* p. 156 Curtis.

Teratelasma gen. nov. p. 823 type species, *T. neumani* sp. nov. p. 824 figd. Mid. Ordovician, U.S.A., Cooper.

Trigrammaria p. 874, *wilsonae* sp. nov., *winchelli* p. 875 figd. *trigonalis prima* p. 874 Mid. Ordovician, U.S.A., Cooper.

†ORTHOTETACEA

Derbyia grandis p. 28 figd. Aygen.

Orthotetes keokuk p. 94 figd. Simorin; *O. suspectum*, *subglobosus* var. *protensa* both figd. Easton.

Schuchertella nevadaensis, *girtyi*, both figd. Warren & Stelck; *S. portlockiana* pp. 17, 37, 83; *radialis* p. 39, both figd. Zakowa.

Streptorhynchus aff. *rugosus* p. 93 figd. **Simorin**; *S.* sp. figd. **Easton**.
Tapajotia genus not accepted **Mendes** (1).

THECIDAEACEA

Lacazella discussed p. 257 **Williams**.

†OLDHAMINOIDEA

OLDHAMINACEA

Adriana (?) *guadalupensis* sp. nov. p. 312 figd. Permian Texas, **Stehli** (1).

Coscinophora sp. figd. **Stehli** (1).

Leptodus sp. figd. **Stehli** (1).

Oldhamia (?) *pedemontana* p. 48 **Rusconi** (1).

Pseudoleptodus gen. nov. p. 311 type species *P. getawayensis* sp. nov. p. 312 figd. Permian Texas **Stehli** (1).

Pterophloios sp. figd. **Stehli** (1).

Rigbyella gen. nov. type species *Paralyttonia girtyi* Wanner & Sieverts p. 310 figd. Permian Texas **Stehli** (1).

†DICTYONELLOIDEA

Dictyonelloidea suborder nov. p. 947, for Family *Eichwaldiidae* **Cooper**.

Eichwaldia subtrigonalis p. 947 figd. **Cooper**.

†PRODUCTOIDEA

PRODUCTACEA

Buxtonia arkansana figd. **Easton**; *B.* sp. (?) figd. **Aygen**.

Otenalosis see *Erratum* below.

Echinoconchus alternatus figd. **Easton**; *E.* discussed p. 474, *gradatus* sp. nov. p. 474 figd. Lr. Carboniferous New South Wales, **Campbell**, **K. S. W.**

Gigantoproductus edelbergensis p. 234 figd., cf. *moderatus* p. 245 figd. **Prentice**.

Kutorginella p. 189 **Yakovlev**.

Linoproductus lineatus p. 27 **Aygen**; *L. pileiformis* figd. **Easton**; *L.* sp. p. 479 figd. **Campbell**, **K. S. W.**

Marginifera sp. p. 28 **Aygen**.

Marginirugus discussed p. 464, first record in Australia, *barringtonensis* p. 465, *barringtonensis alatus* subsp. nov. both figd. Lr. Carboniferous New South Wales, **Campbell**, **K. S. W.**

Proboscidella p. 189 **Yakovlev**.

Productus brachythaerus proposed suppression of name as used by Sowerby (1844) and validation as used by Morris (1845) **Maxwell**; *P. carbonarius* p. 243 figd. to show deformation **Bredden**; *P. cestriensis* figd. **Easton**; *P. longispinus* figd. **Renz**; *P. nystianus*, *buxtonia* p. 28, **Aygen**; *P. pustulosus* p. 117, **Parkinson**; *Productus* sp. p. 22, **Zakowa**; *Productus* s.s. *spirolophus* figd. p. 262 **Williams**.

Productus (Avonia) laevicula p. 121 figd., **Simorin**.

Productus (Buxtonia) scabriculus pp. 43, 86; aff. *scabriculus* p. 86; *P. (B.)* sp. p. 44 all figd. **Zakowa**.

Productus (Dictyoclostus) semireticulatus p. 118, **Parkinson**; *P. (D.) burlingtonensis* p. 136, *fernnglenensis* p. 137, *viminalis* p. 139, *sogurbajensis* sp. nov. p. 140, *sogurbajensis* var. *irregularis* var. nov., *deruptus* p. 142, *karagandensis* p. 144, all figd. Lr. Carboniferous, Kazakhstan, U.S.S.R., **Simorin**.

Productus (Echinoconchus) crameri pp. 21, 40; *punctatus* p. 21; *defensus* p. 41; *elegans* p. 85 all figd. **Zakowa**; *P. (E.) morbillianus* p. 122, *echinata* p. 123, aff. *arctifossa* p. 124, *celkaricus* p. 125, *P.* sp. p. 126, all figd. **Simorin**.

Productus (Eomarginifera) cf. simplex p. 42 figd. **Zakowa**.

Productus (Gigantella) latissimus var. *complicata*, var. *prisca* both p. 87 figd. **Zakowa**.

Productus (Linoproductus) striatus var. *spinifera* p. 85, *corrugatus* pp. 22, 41 both figd. **Zakowa**; *P. (L.) lasevicostus* p. 128, *laevicostus* var. *latocostalis* var. nov. p. 130, *alcaghiri* p. 131, *djartassensis* sp. nov. p. 132, aff. *cancriniformis* p. 133, *sampsoni* p. 134, sp. p. 135, all figd. Lr. Carboniferous, Kazakhstan, U.S.S.R.,

Simorin; *P.* (? *L.*) sp. indet. p. 213 figd. **Sahni & Srivastava.**

Productus (*Plicatifera*) *meisteri* p. 109, *semisburgensis* p. 110, *borukaevi* sp. nov. p. 112, *borukaevi* var. *aktjubensis* var. nov. p. 113, *nalivkini* sp. nov. p. 114, *mesicostalis* p. 115, *arcuatus* p. 116, *concentricus* p. 117, *kassini* p. 119, *aktaicus* p. 120, all figd. L^r. Carboniferous, Kazakhstan, U.S.S.R., **Simorin.**

Productella (*Productella* ?) *plexa* sp. nov. p. 490 figd., *P.* (*P.*?) sp. A. p. 497, figd. Mid. Devonian, Eifel, Germany, **Wolfart.**

Productus (*Productus*) *redesdalensis* p. 83, var. *silesiaca* p. 84, both figd. **Zakowa.**

Productus (*Sinuatella*) *gaablauensis* p. 20, 40 figd. **Zakowa.**

Productus (*Thomasina*) sp., *terekensis* sp. nov. p. 145, *dengisi* p. 146, *ordaicus* p. 147, all figd. L^r. Carboniferous, Kazakhstan, U.S.S.R., **Simorin.**

Productus (*Waagenoconcha*) spp. p. 127, 128 figd. **Simorin.**

Productella spp., *belanskii*, *coloradoenses*, all figd. **Warren & Stelck.**

Pustula p. 476, *abbotti* sp. nov. p. 476, *gracilis* sp. nov. p. 477 both figd. L^r. Carboniferous New South Wales, **Campbell, K. S. W.**; *P.* *pustulosa*, *interrupta*, *pilosa*, p. 117, **Parkinson.**

Semiplanus p. 246, *fragilis* sp. nov. p. 246, figd. L^r. Carboniferous Derbyshire **Prentice.**

Strophalosia evolution from *Productus* discussed p. 189 **Yakovlev.**

Terrakea proposal to validate *Productus brachythaerus* Morris 1845 (non Sowerby 1844) as type species, **Maxwell.**

Tschernyschewia yakowlewi figd., *T.* sp., p. 28 **Aygen.**

Waagenoconcha discussed p. 469, *delicatula* sp. nov. p. 471 figd. L^r. Carboniferous New South Wales, **Campbell, K. S. W.**; *W. humboldti* p. 28 **Aygen.**

ERRATUM

Productacea

Ctenalosia gen. nov. type species *C. fixata* sp. nov. **Stehli J.** Paleont 29 1955 included incorrectly in Oldhamiacea in Zool. Record for 1955.

†CHONETOIDEA

CHONETACEA

Chonetes australis p. 41 figd., *teicherti* p. 44, *spooneri* sp. nov. p. 44, *buchanensis* p. 45, Mid. Devonian, Victoria, **Talent**; *C. tricornis* pp. 19, 40, 83; *C.* sp. ? pp. 19, 40 both figd. **Zakowa.**

Chonetes (*Chonetes*) *laguessianus*, pp. 18, 39, *longispinus* p. 18 both figd. **Zakowa**; *C.* (*C.*) *setigera* p. 97, *rusakovi* sp. nov. p. 98, cf. *dalmaniana* p. 99, *zamedini* sp. nov. p. 100, *bulakensis* p. 101, *aschliariki* sp. nov. p. 102, *wysotzkii* p. 103, *ischimica* p. 104, *kinghirica* var. *transversa* p. 105, *laguessianus* p. 106, *C.* (*Paeckelmannia* ?) *subcarinata* p. 107, all figd. L^r. Carboniferous, Kazakhstan, U.S.S.R., **Simorin.**

Chonetes (*Plicochonetes*) *glenparkensis* p. 95, *armata* p. 96 both figd. **Simorin.**

RHYNCHONELLOIDEA

RHYNCHONELLACEA

†*Acanthothyris* cf. *spinosa* p. 181 **Ksiazkiewicz.**

†*Allorhynchus heteropsis* p. 238, figd. **Simorin.**

†*Ancistrorhyncha* p. 618, *crassa* p. 623, *globularis*, *missouriensis* p. 624, all spp. nov., *australis* p. 620, *costata* p. 621, *A.* ? *perplexa*, *vacua* spp. nov. p. 625, all figd. Mid. Ordovician, U.S.A. and Canada, **Cooper.**

†*Ancistrorhynchiniinae* subfam. nov. p. 618, for *Ancistrorhyncha* and *Drepanorhyncha* Mid. Ordovician, U.S.A., **Cooper.**

†*Basilicorhynchus basilicum* figd. **Warren & Stelck.**

†*Belbekella* gen. nov. p. 62 type species *B. airgulensis* sp. nov. p. 63 figd. L^r. Chalk, Crimea, U.S.S.R., **Moisseev.**

†*Calvinaria albertensis* figd. Warren & Stelck.

†*Camarotoechia boloniensis* p. 225, *elegantula* p. 227, *tuta* p. 228, *rowleyi* p. 229, *aschliariki* sp. nov. p. 231, *acutirugata* p. 232, aff. *laeta* p. 233, *panderi*, *cidertensis* p. 235, *karkarula* p. 237, all figd. L^r. Carboniferous, Kazakhstan U.S.S.R., Simorin; *C.* cf. *contracta*, *horsfordi*, *nordeggi*, all figd. Warren & Stelck; *C.* cf. *llandoveriana* p. 148, *borealis* var. *diodonta* p. 150 Curtis; *C. pahrana-gatensis* sp. nov. p. 16 figd. U^r. Silurian Great Basin U.S.A. Waite; *C. triaequalis* discussed p. 12 Sar-tenaer; *C.* sp.? p. 20 Zakowa.

†*Capillirhynchia wrightii* p. 32 figd. Drot.

†*Cardiarina* gen. nov. p. 527, type species *C. cordata* sp. nov. p. 529 figd. U^r. Carboniferous, New Mexico, Cooper (2),

†*Cardiarinidae* fam. nov. p. 527, for *Cardiarina* only U^r. Carboniferous, U.S.A., Cooper (2).

Caryorhynchus castanea var., *carya* both figd. Warren & Stelck.

†*Cirpa* distribution discussed p. 167 Ager.

†*Cryptorhynchia pulcherrima* p. 135 figd. Agrawal.

†*Cyclothyris latissima* p. 172 figd. Owen.

†*Denticuliphoria* gen. nov. p. 57, type species *D. rara* sp. nov. p. 57 figd. U^r. Permian, Northern Caucasus, U.S.S.R., Licharew.

†*Dorytreta* gen. nov. p. 666, type species *D. bella* sp. nov. p. 667, figd., *ovata* p. 667, *D.?* *reversa* spp. nov. p. 668, Mid. Ordovician, U.S.A., Cooper.

†*Drepanorhynchia* gen. nov. p. 627, type species *Porambonites ottawaensis* Billings 1862 p. 628 figd., *ambigua* p. 627 figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

†*Gerassimovia* gen. nov. p. 59 type species *G. gefoensis* sp. nov. p. 60 figd., U^r. Permian, Northern Caucasus, U.S.S.R., Licharew.

†*Gibbirhynchia* distribution discussed, Ager.

†*Grandirhynchia* distribution discussed Ager; *G.* genus revised p. 18, *grandis* p. 20, *laevigata* p. 23 both figd. with sections, *G.* sp. nov. p. 25 figd. L^r. Jurassic England, Ager (1).

Hemithyris psittacea p. 281, Elliott; *H. psittacea* subsp. *woodwardi* p. 90 Hayasaka & Uozumi; *H.* pallial sinusens figd. p. 276 Williams.

†*Homoeorhynchia* distribution discussed, *H. capitulata* nom. nov. for *Rhynchonella lineata* Tate p. 164 L^r. Jurassic, England Ager; *H.* genus revised p. 26, species listed p. 27, *acuta* p. 29, *capitulata* p. 33, *cynocephala* p. 35 all figd. Ager (1).

†*Hypothyridina cameroni*, cf. *emmonsii* both figd. Warren & Stelck.

†*Kutchirhynchia kutchensis* p. 134 figd. Agrawal.

†*Lamellaerhynchia* p. 652, *rostri-formis* p. 652, *desori* p. 657, *hauteri-viensis* p. 660, *picteti* sp. nov. p. 663, *gillieronii* p. 669, *renouxiana* p. 671, *multicostata* sp. nov. p. 676, all figd. L^r. Cretaceous Switzerland Burri.

†*Leiorhynchus planoovalis* p. 248 figd. Simorin.

†*Lepidocyclidae* fam. nov. p. 657 for *Lepidocyclus* only Mid. Ordovician, U.S.A., Cooper.

†*Lepidocyclus* sp. 1 p. 658 figd. Cooper.

†*Lepidorhynchia* gen. nov. p. 689 type species *L. dichotoma* sp. nov. p. 690 figd. L^r. Cretaceous, Switzerland, Burri.

†*Nudirostra* sp., *athabascensis*, *mesacostalis*, *madisonensis*, *utahensis*, *walcotti* var. *seversoni*, *utahensis* var. *ventricosa*, all figd. Warren & Stelck.

†*Oligorhynchia* p. 658, *bifurcata* p. 659, *elongata*, p. 660, *inexpectata* p. 661, spp. nov., *angulata* p. 659, *subplana*, *subplana gibbosa* p. 662, *O.* sp. 1 p. 663, all figd. Mid. Ordovician, U.S.A., Cooper.

†*Oligorhynchidae* fam. nov. p. 658, for *Oligorhynchia*, *Sphenotreta* and *Dorytreta* Mid. Ordovician, U.S.A., Cooper.

†*Orthorhynchula linneyi* p. 669 figd. Cooper.

†*Orthorhynchulidae* fam. nov. p. 669, for *Ornithorhynchula* only Mid. Ordovician, U.S.A., Cooper.

†*Paryphorhynchus triaequalis* p. 239, *gonthieri* p. 241, *zobeida* p. 242, *fatima* p. 243, *korsakpaica* p. 245, all figd. Simorin.

†*Peregrinella peregrina peregrina* p. 586, *peregrina subsilvana* subsp. nov. p. 586 figd., *silesica* (?), *P.* (?) sp. nov. p. 589 figd. Trumpy.

†*Plectorhynchella roemeri* p. 566 figd. Drot.

†*Plicarostrum* p. 678, *hauteriviense* p. 679, *aubersonense* sp. nov. p. 683, all figd. Burri.

†*Plicirhynchia* sp. p. 196 figd. Jaanusson (1).

†*Prionorhynchia* distribution discussed, Ager; *P.* genus revised p. 44, species listed p. 46, *serrata* p. 47 figd. with sections, *quinqueplicata* p. 49 figd. Ager (1).

†*Protorhyncha nasuta* p. 154 figd. Rukavishnikova; *P.* short note on the missing type specimens of this genus, *Atrypa dubia* Hall, p. 618, Middle Ordovician, U.S.A., Cooper.

†*Pseudopugnax* gen. nov. p. 56 type species, *P. planissima* sp. nov. p. 56 figd., U^r. Permian, Northern Caucasus, U.S.S.R., Licharew.

†*Pseudowellerella* gen. nov. p. 58, type species *P. nikhitchi* p. 58 figd. U^r. Permian, Northern Caucasus, U.S.S.R., Licharew.

†*Pugnax acuminatus*, vars. *plicatus sulcatus*, *platylobus* p. 118 Parkinson; *P. brevicostatus* sp. nov. p. 77 figd. U^r. Silurian, Victoria, Talent (1); *P.* sp. nov., *P.* sp., both figd. Warren & Stelck.

†*Pugnoides gerardimontis* sp. nov. p. 2, *basilicum* p. 16, both figd. U^r. Devonian Belgium, Sartenaer. *P. sandersoni*, solon, *subacuminata*, all figd. Warren & Stelck.

†*Quadratorhynchia* distribution discussed Ager; *Q.* genus revised p. 12, *quadrata* p. 14 figd. with sections, *crassimedia* p. 16, *crassimedia depressa* subsp. nov. p. 17 both figd., L^r. Jurassic, England, Ager (1).

†*Rhynchonella* s.s. discussed p. 28. Ager (1); *R. acuticosta* p. 76, 82; cf. *badensis* p. 76, 84; both figd. Gerasimov; *R.* cf. *kaminski* p. 186, aff. *spoliata* p. 208, *capillata* p. 215, *sparsicosta* p. 216, *agassizi* p. 216, cf. *zeuschneri* p. 217, *aliformis* p. 217, *suessi* p. 218, all figd. Ksiazkiewicz; *R. levantina* p. 34 figd. Aygen; *R. trigonella* p. 185, *subechinata* p. 185, *orbignyana* p. 185, sp. indet. p. 186, all figd. Ksiazkiewicz; "*R.*" *gibbsiana* p. 165, *leightonensis* p. 167, both figd., Owen; "*R.*" sp. nov. A p. 138, *drotae* sp. nov. p. 139, sp. nov.? B. p. 140, *R.* sp. p. 140, all figd., U^r. Jurassic, India Agrawal.

†"Rhynchonelle" figd. p. 30 Dubois & Portmann.

†*Rhynchonelloidea lineata* distribution discussed Ager; *R.* genus discussed p. 39, *lineata* p. 40 figd. cynica p. 43, figd. Ager (1); *R. spathica* p. 65, *triplicosa* p. 66, Shirardin.

†*Rhynchonelloidella smithi* p. 507 McKerrow et al. (2).

†*Rhynchotrema kentuckiensis* p. 629, *wisconsinense* p. 630, both figd. Cooper; *R. otarica* p. 156, *rudis* p. 158 spp. nov. both figd., Ordovician, U.S.S.R., Rukavishnikova.

†*Rhynchotrematidae* fam. nov. p. 628, for *Rhynchotrema* and *Rostricellula* Mid. Ordovician, U.S.A. Cooper.

†*Rhynchotreta* sp. indet. p. 79 figd. Talent (1).

†*Rostricellula acutiplicata* p. 630, ? *angulata*, *basalaris* p. 632, *colei*, *compressa* p. 634, *costata* p. 636, *cuneata* p. 637, *elliptica* p. 638, ? *minuta* p. 640, *multicostata* p. 641, *nucleolata ovata* p. 642, *parva* p. 643, *pulchra* p. 646, *raymondi* p. 647, *rotundata* p. 649, *subtransversa* p. 650, *transversa* p. 651, *triangulata*, *truncata* p. 652, *tumidula* p. 653, *variabilis*, *varicosta* p. 654, *wilsonae* p. 655, all spp. nov., *ainsliei* p. 631, *cuneiformis* p. 637, *decorahensis* p. 638, *major minnesotensis* p. 639, *missouriensis* p. 641, *orientalis* p. 642, *plattinensis* p. 644, *plena* p. 645, *plena altilis* p. 646, *plena plicifera*, *pristina* p. 646, *rostrata* p. 648, *R.* sp. 1 p. 656, sp. 2, sp. 3 p. 657, all figd. Mid. Ordovician, U.S.A. and Canada, Cooper.

†*Septaliphoria* ? cf. *pinguis* p. 693 figd. Burri.

†*Shumardella missouriensis* p. 247 figd. Simorin.

†*Sphenotreta* gen. nov. p. 663, type species *S. cuneata* sp. nov. p. 665, *sulcata* sp. nov. p. 666, *acutirostris* p. 664 all figd. Mid. Ordovician, U.S.A., Cooper.

†*Stolmorhynchia* (?) *distracta* p. 33 figd. Drot; *S. nobilis* p. 136 figd. Agrawal.

†*Suiaella* gen. nov. p. 61 type species *S. weberi* sp. nov. p. 61 figd. L^r. Chalk, Crimea, U.S.S.R., Moisseev.

†*Sulcirhynchia* p. 642, *valangiensis* p. 643 figd. Burri; *S.* genus discussed p. 168, *S. hythensis* sp. nov. p. 169 figd. L^r. Cretaceous, Gt. Britain, Owen.

†*Tegulorhynchia imbricata* p. 193, *T.* sp. p. 195 both figd. Jaanusson (1).

Tegulorhynchia p. 280, Elliott; *T.* *spirolophes* figd. pp. 261–2, pallial sinuses figd. p. 276 Williams.

†*Tetracamera neogenes* figd. Easton.

†*Tetrarhynchia* distribution discussed, *T. subconcinna* nom. nov. for *Rhynchonella subconcinna* Davidson, L^r. Jurassic, England, Ager; *T.* genus revised p. 1, species listed p. 2, *tetrahedra* p. 4 figd. with sections, *dunrobinensis* p. 8, *dumbletonensis* p. 9, *subconcinna* p. 10 all figd. Ager (1).

†*Uncinulus akmolla* p. 250, *akmolla* var. *multiplicatus* var. nov. p. 251, both figd. L^r. Carboniferous, Kazakhstan, U.S.S.R., Simorin; *U. globosus* sp. nov. p. 78 figd., U^r. Silurian, Victoria Talent (1); *U.* sp. indet. p. 21 Talent.

†*Welleria subtrigona* p. 252 figd. Simorin.

†STENOCISMATACEA

†*Camarophoria hamburgensis* p. 222, *hamburgensis* var. *glaber* var. nov. p. 223, *bisinuata* p. 224, all figd. L^r. Carboniferous, Kazakhstan, U.S.S.R., Simorin.

Psilocamara gen. nov. p. 523, type species *P. renfroarum* sp. nov. p. 524 figd., U^r. Carboniferous, U.S.A., Cooper (2).

Stenocisma bowsheri sp. nov. p. 525 figd. U^r. Carboniferous, U.S.A., Cooper (2).

†ATRYPOIDEA

ATRYPACEA

Family Atrypidae, gen. et sp. nov. (un-named) p. 384 figd. U^r. Ordovician Estonia, Jaanusson (1).

Atrypa andersoni (err. pro. *andersonensis*), *A.* spp. *borealis*, *arctica*, *andersonensis*, cf. *pechiensis*, cf. *bremerensis*, cf. *mascula*, aff. *clarkei*, *independensis*, cf. *independensis*, cf. *gigantea*, cf. *owenensis*, *albertensis*, *gregeri*, *scutiformis*, cf. *deflecta*, *devoniana*, *deflecta*, cf. *montanensis*, *cosmeta*, cf. *albertensis*, cf. *hackberryensis*, *devoniana* var. *bentonensis*, cf. *bentonensis*, *A.* sp. nov., all figd., Warren & Stelck; *A. sanzini* sp. nov. p. 13 figd. L^r. Ordovician, Argentina, Rusconi; *A. thomsonensis* sp. nov. p. 79 figd., *A.* spp. indet. p. 80 U^r. Silurian, Victoria, Talent (1).

Coelospira pallial sinuses figd. p. 276 Williams; *C. hemisphaerica* p. 148 Curtis.

Gruen[e]waldtia sp. figd. Warren & Stelck.

Hallina globularis, *lirata* spp. nov. p. 689 figd., *saffordi* p. 690 figd. Mid. Ordovician, U.S.A., Cooper.

Idiospira gen. nov. p. 690, type species *Camerella panderi* Billings 1859 p. 691 figd., *warthini* sp. nov. p. 692 figd., *I. ? inornata* p. 691 Mid. Ordovician, U.S.A. and Canada, Cooper.

Plectatrypa sulevi p. 397, *P.* sp. nov., *A.* p. 398 both figd., *P.* sp. nov., *B.* p. 398 Jaanusson (1); *P. pennata* sp. nov. p. 160 figd. Ordovician, U.S.S.R., Rukavishnikova.

Protozyga costata p. 676, *elongata* p. 677, *loeblichi* p. 679, *magnicostata* p. 680, *microscopica*, *nasuta* p. 681, *profunda*, *rotunda* p. 683, *rotundiformis* p. 685, *superba* p. 686, *tumida*, *uniplicata* p. 687, all spp. nov.,

exigua p. 678, *nicolleti* p. 682, *P.* sp. 1 p. 688 Mid. Ordovician, U.S.A. and Canada, Cooper.

Pustulatia nom. nov. for *Pustulina* Cooper 1942 (non Quenstedt 1858 Crust.) type-species *Quenstedtia pustulosa* Hall, Cooper (3).

Spinatrypa kelusiana sp. nov. p. 384, *aspera aspera*, both figd. Mid. Devonian, Germany, Struve.

Zygospira p. 669, *circularis*, *elongata*, p. 670, *lebanonensis* p. 671, *mediocostellata* p. 672 spp. nov. *recurvirostris*, *variabilis* p. 673, *Z.* sp. 1 p. 674, all figd., *Z. ? matutina* p. 672 figd. Mid. Ordovician, U.S.A., Cooper; *Z. deuterolophe* figd. p. 262 Williams; *Z. parva* sp. nov. p. 162 figd. Ordovician, U.S.S.R., Rukavishnikova.

†SPIRIFEROIDEA

SPIRIFERACEA

Allanaria allani, *minutilla*, both figd. Warren & Stelck. (? gen. nov.)

Ambikella gen. nov. type species *A. fructiformis* sp. nov. p. 207 figd., genus compared with *Notospirifer* p. 214, Permian, India, Sahni & Srivastava.

Ambocoelia minuta sp. nov. p. 83, figd. Ur. Silurian, Victoria, Talent (1); *A. meristoides* figd. Warren & Stelck; *A. rogeri* sp. nov. p. 565 figd. Lr. Devonian, Morocco Drot; *A. umbonata* p. 201, *unionensis* p. 202, both figd. Simorin.

Ambothyris ? sp. figd. Warren & Stelck.

Brachythyris suborbicularis p. 190, *kassini*, *globosa* sp. nov. p. 192, *peculiaris* p. 194, sp. 195, all figd. Lr. Carboniferous, Kazakhstan, U.S.S.R., Simorin.

Choristites cf. *glennfoxi*, *C. ? proctistus* both figd. Warren & Stelck.

Crurithyris granularis p. 57 figd. Mendes (1).

Cyclospira parva, *preciosa* p. 694, *quadrata* p. 695, *sulcata* p. 696, all spp. nov., *bisulcata*, *C. ? longa* p. 693, all figd., Mid. Ordovician, U.S.A., Cooper.

Cyrtiopsis nahanniensis cf. *hiraethynae*, both figd. Warren & Stelck.

Cyrtospirifer sp., *thalattodora*, *whitneyi*, *animasensis*, *monticola* all figd. Warren & Stelck.

Cyrtospirifer (*Choristites* ?) *monticola*, figd. Warren & Stelck.

Darvasia edelsteini sp. nov. p. 64 figd. Lr. Permian, U.S.S.R., Licharew.

Delthyris elevatus p. 148 Curtis.

Eleutherokomma sp., *hamiltoni*, *leducensis*, *jasperensis*, *beardi*, *killeri*, *reidfordi*, all figd. Warren & Stelck.

Elytha undifera, *compacta*, both figd. Warren & Stelck.

Eospirifer tingi p. 629, *uniplicatus* sp. nov. p. 630, *uniplicatus* var. *major* var. nov. p. 631 all figd. Ur. Silurian, China, Tsing.

Howellella lirata p. 80, *latisulcata* p. 82 spp. nov. figd., cf. *gibbosa* p. 82, *H.* sp. indet. p. 83, Ur. Silurian, Victoria, Talent (1); *H. pauciplicata* sp. nov. p. 17, *smithi* sp. nov. p. 17, both figd. Ur. Silurian Great Basin, U.S.A., Waite.

Howittia gen. nov., type species *Spirifer howitti* Chapman, p. 34 figd. Mid. Devonian, Victoria, Talent.

Indospirifer sp. figd. Warren & Stelck.

Neophricodothyris cf. *caroli* p. 29 figd. Aygen.

Neospirifer dresseri sp. nov. p. 52 figd. Ur. Carboniferous, Brazil, Mendes (1).

Notospirifer compared with *Ambikella* p. 214 Sahni & Srivastava.

Phricodothyris mourai sp. nov. p. 44 figd. Ur. Carboniferous, Brazil, Mendes (1).

Regelia glaucus figd. Warren & Stelck.

Reticularia cooperensis p. 196, *adeli* p. 197, *pseudolineata* p. 198 figd. Simorin; *R. setigera* figd. Easton.

Spinella gen. nov. p. 21 type species *S. buchanensis* sp. nov. p. 22, *buchanensis scissura* subsp. nov. p. 27, *buchanensis philipi* subsp. nov. p. 28, *maga* sp. nov. p. 28, all figd. Mid. Devonian, Victoria, Talent.

Spinocyrtia sp. figd. **Warren & Stelck.**

Spirifer bollandensis p. 118, **Parkinson**; *S. euryteines*, *S.* sp., *strigosus*, *disjunctus*, all figd. **Warren & Stelck**; *S. leidyi*, *pellaensis* both figd. **Easton**; *S. oliveirai* sp. nov. p. 48 figd. **U^r**. Carboniferous, Brazil, **Mendes (1)**; *S. papillionata*, *duttai* spp. nov. p. 208 figd. Permian India **Sahni & Srivastava**.

Spirifer (Cyrtospirifer) sulcifer p. 150, *sulcifer* mut. *ulentensis* p. 152, *insulcifer* p. 153, *insulcifer* var. *sphaeroidea* p. 155, *calcaratus* p. 156, *quadratus* p. 158, *archiaci* p. 159, all figd. **L^r**. Carboniferous, Kazakhstan, **U.S.S.R., Simorin**.

Spirifer (Lamellispirifer) posterus p. 161, aff. *roemerianus* p. 163, *nuraensis* sp. nov. p. 163, all figd. **L^r**. Carboniferous, Kazakhstan, **U.S.S.R., Simorin**.

Spirifer (Lytha) plenus p. 187 figd. **Simorin**.

Spirifer (Spinocyrtia) ostiolatus p. 463 figd. Mid. Devonian, Germany **Metje**.

Spirifer (Spirifer) sibiricus p. 165, *kasak* p. 166, *kasacek* p. 168, *platynotus* p. 169, *biplicatus* p. 171, *missouriensis* p. 172, *incertus* p. 173, *imbrex* p. 175, *maykudukensis* sp. nov. p. 176, *gapeevi* sp. nov. p. 177, *grimesi* p. 179, *baiani* p. 180, *forbesi* p. 181, *kasachstanensis* p. 183, *aschliariki* p. 184, *akkuduki* sp. nov. p. 185, *karagandae* p. 186, all figd. **L^r**. Carboniferous, Kazakhstan, **U.S.S.R., Simorin**.

Spirifer (Tylothyris) laminosa p. 189 figd. **Simorin**.

Subansiria gen. nov. type species *S. rangensis* sp. nov. p. 212 figd. Permian, India, **Sahni & Srivastava**.

Tenticospirifer cyrtiniformis figd. **Warren & Stelck**.

Theodossia (Vandergrat[eh]ella) sp., figd. **Warren & Stelck**.

Thomasaria rockymontana, figd. **Warren & Stelck**.

Triplecella type species said to be synonym of *Cyclospira bisulcata* p. 697 **Cooper**.

Warrenella apodecta, *electea*, both figd. **Warren & Stelck**.

ATHYRACEA

Superfamily Athyracea nom. nov. pro Rostrospiracea Schuchert & Le Vene 1929 **Williams**.

Athyris cestriensis figd. **Easton**; *A. lamellosa* p. 214, *angelica* p. 215, *tobolica* p. 216 all figd. **Simorin**; *A. pallial sinuses* figd. p. 276 **Williams**; *A. vittata* var. *buffaloensis*, var. *randalia*, var. *brandonensis* *angelica*, all figd. **Warren & Stelck**.

Athyris (Cliothyridina) tenuilineata p. 217, *obmaxima* p. 218, both figd. **Simorin**.

Athyris (Composita) trinuclea p. 219 figd. **Simorin**.

Buchanathyris gen. nov. p. 36 type species *B. westoni* sp. nov. p. 37, *waratahensis* sp. nov. p. 39 figd. Mid. Devonian, Victoria, **Talent**.

Camargophorella missouriensis p. 220, figd. **Simorin**.

Cliothyridina devonica figd. **Warren & Stelck**; *C. sublamellosa* figd. **Easton**.

Composita trinuclea, *subquadrata* both figd. **Easton**.

Diplospirella deuterolophe and *spirolophe* figd. p. 262 **Williams**.

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†*Beecheria* discussed p. 302, *bovi-*
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†*Coenothyris* p. 194 **Stehli (3).**

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†*Dielasma* discussed p. 301, *elon-*
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†*Epithyris oxonica* p. 507 **McKer-**
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†*Euidothyris holcophora* p. 32 figd.
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†*Gefonina* p. 192 **Stehli (3).**

†*Girtyella indianensis* figd. **Easton**;
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†*Glossothyris bouei* p. 218 figd.
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†*Hamburgia typa* p. 262 figd.
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†*Heterelasma schucherti* sp. nov.
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†*Labatia* gen. nov. p. 65 type species
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†*Loboidothyris perovalis* var. *kleinii*
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†*Lobothyris* distribution of species
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†*Pygope diphya* p. 220 figd.
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†*Rensselandia trocholophe* figd. p. 262 **Williams**; *R. laevis* figd. **Warren & Stelck**.

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†*Argyrotheca* p. 192 **Stehli** (3).

†*Aulacothyris* distribution discussed **Ager**.

†*Dallina septigera* p. 190 **Stehli** (3).

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Glaciarcula gen. nov. p. 285, type species *Terebratella spitzbergensis* **Davidson** 1852 **Elliott**.

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†*Ornithella obovata*, *bathonica* p. 507 **McKerrow et al.** (2).

†*Pachymagas* sp. p. 198 figd. **Jaanusson** (1).

†*Terebratalia coreanica* p. 91 **Haya-saka & Uozumi**; *T. coreanica* p. 195, conchometrical analysis **Kotoh**.

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Fam. Zeilleriidae relationship to Terebratellacea s.s. discussed p. 195 **Stehli** (3).